

International Abstract of Surgery

SUPPLEMENTARY TO

Surgery Gynecology and Obstetrics

EDITORS

FRANKLIN H. MARTIN, M.D., Chicago

PROF. PAUL LECHE, PARIS, FRANCE

SIR BERKELEY MOYNIHAN, K.C.M.G., C.B., Leeds, England

SUMNER L. KOCH, M.D., Abstract Editor

Volume XXVI

January to June 1923

PUBLISHED BY
THE SURGICAL PUBLISHING COMPANY OF CHICAGO
30 NORTH MICHIGAN AVENUE, CHICAGO

Copyright by
THE METEORICAL PUBLISHING COMPANY
OF CHICAGO

1913

CONSULTING EDITORIAL STAFF

GENERAL SURGERY

AMERICA F WELLY ANDREWS DONALD C BALFOUR WILLARD BARTLETT FREDERIC A BENLEY ARTHUR DEAN BEVA J F BEVIE GEORGE E BRAWER W B BRIDGEMAN D VID CHERVIE H R CHILLET ROBER C. CONFEY F G EGGY CONVILL FREDERIC J COLTON GEORGE W CRILE WILLIAM R CURBINS HARVEY CUSHING J CHALKERS D CORT CHARLES DAYSON D N EMMERICH J M T FINNEY JACO FRANK CHARLES H FRASER EMANUEL FRIEND WILLIAM FULLER JOHN H GIBSON D W GRAHAM W W GRANT A F HALSTEAD M L HARRIS A P HEINICK WILLIAM W HENBERT THOMAS W HUNTINGTON JAMES N JACKSON E S JUDG C E KAMLER ARTHUR A LAW ROBERT G LECOTTE DEB B LEWIS ARCHIBALD MACLAREN EDWARD MARTIN RUDOLPH MAZAR CHARLES H M YO WILLIAM J MAYO JOHN R MCDILL STUART MCGUIRE LEWIS S MCMURTRY WILL MEYER FRED T MURPHY JAMES M NEFF EDWARD H NICHOLS A J OCHTER CHARLES H PECK J R PENNINGTON S C PLUMMER CHARLES A POWERS H M RICHETER EMMET REXFORD H A ROYSTER W L SCHROEDER CHARLES L STODDER M G SEELIG E J SEHN JOHN E SCHOFER JAMES E THOMPSON HERMA TUDOLAKY JOHN W TURNER GEORGE TULLY VAUGHAN JOHN R WATSON CANADA E W ARCHIBALD G E ARMSTRONG H A BRUCE I H CAMERON JAMES HALPENTRY J ALEX HUTHCHINSON FRANCIS J STEPHENSON F N G SARR ENGLAND H BRUNTON AGNES ARTHUR E BARKER SIR WATSON CHEYNE W BARNES HANDELEY SIR ARTHUR MONTAGUE G H MASTERS ROBERT MILNE SIR BERKELEY MOTHERMAN ROBERTON PARKER SIR HAROLD STILES GORDON TA LOR IRELAND WILLIAM IRELAND DE C WHEELER

GYNECOLOGY AND OBSTETRICS

AMERICA IRVING T ANDREWS BROOKS M ANDRACH W E ARNTON J M BALDY CH. YONG W BARRETT HERMA J BOLDY J WHELEY BOYER LEROY BROOK HENRY T BYFORD JOHN G CLARK THOMAS S CULLEN EDWARD P D VIE JOSEPH B D LEE ROBERT L DICKINSON W A NEWBY DORLA E C DODDGE H. COO FREDERICK CHARLES S ILDER PALMER FINDLEY GEORGE GELLIBRY J RIDGEL GOSPE SIXT C GORDO BRYON C HERT JOSEPH T JOHNSON HOWARD A KELLY FLOREAN KRUG L J LADONER H I LEWIS FRANK W LITCH WALTER P M YTON J J MONTGOMERY GEORGE C MORGAN HENRY P NEWMAN GEORGE H NOBLE CHARLES E PADDOCK C ARLES B PENNINGTON REBECK PETERSON JOHN O POLAR CHARLES B REED EDWARD RETHOLIN LUIS RICE JOHN A SANDSON F F SHIMSON RICHARD R SMITH WILLIAM S STONE WILLIAM P STODDER FREDERICK J TUDOR HOWARD C T YLON HERMAN M VENTERO W F B WAKEFIELD GEORGE G WARD J J WRIGHT W LLIAM CANADA W W CHITPA WILLIAM GARDNER F W MARLOW K C MCILWRAITH B P W TROY A H WARDEN ENGLAND RUSSELL ANDREWS THOMAS W LEDEN W E FOTHERGILL T B HELLIER THOMAS WILCO SCOTLAND WILLIAM FORDYCE J M MURDO LIRR IRELAND HASTINGS TRENT AUSTRALIA RALPH WERRALL NEW ZEALAND HENRY JELLYTT SOUTH AFRICA H T WELF M. SELL INDIA APO BATH DAS

GENITO URINARY SURGERY

AMERICA WILLIAM L BA WILLIAM F B BILLY JOSEPH J BOWEN L W BRECHTERA HUGH CAMO JOHN R CULLEN C ARLES H CHITTWOOD JOHN H COY YORKE, JR FRAZER R HACHER ROBER HERBERT EDWARD L KEYS, J GUYRA KOLBACHER I KREHSEL BRADFORD LEWIS G FRANK LYNDON GRANVILLE MAC GOW L L SCHWEDY J BENTLEY SOUTER B A THOMAS WILLIAM N WISE ED HUGH H YOUNG ENGLAND JOHN G PARDON J W THOMPSON WALKER INDIA METTENDRAL MITH

CONSULTING EDITORIAL STAFF—CONTINUED

ORTHOPEDIC SURGERY

AMERICA E C ABBOTT V IR NEIL ALLISON W S BAER ALBERT H FRIEDBERG VIRGIL P GENAY ARTHUR J GILLETTE JOEL E GOLDENWALT ROBERT W LOVETT GEORGE B PAGEARD W W PLUMMER JOHN L PORTER JOHN RIMMON EDWIN W RYERSON HARRY M SHIRM D VIDAL JR H L T YLOR JAMES K YOUNG CANADA A MACKENZIE FORBES HERBERT P H GALLOWAY CLARENCE L STARR ENGLAND SIR ROGER JONES A H TURRY HARRY PLATT

ROENTGENOLOGY

AMERICA FREDERICK W CALDWELL RUSSELL D CARRA JAMES T CASE L GREGORY COLE PRESTON M HUCKEY HENRY HUGLEY GEORGE C JOHNSON SIDNEY LANGE GEORGE E PYABELLER HOLLIS E PUTTICK CANADA SAMUEL COWLING ALEXANDER HOWARD PERE

SURGERY OF THE EYE

AMERICA E V L BROWN H D BRUNS VARD H HULEY EDWARD JACKSON FRANCIS LAYE WILLIAM CAMPBELL PORTY BROWN PERRY ROBERT L RAYBOLDFE JOHN F WEISS CAMILLA D WESCOTT WILLIAM H WILDE CARY A WOOD HERMAN WOODS ENGLAND J B LAWTON W T HOLMES SPICER SCOTLAND GEORGE A BERRY A MAITLAND RAMSEY

SURGERY OF THE EAR

AMERICA LEWIS W DA MAX A GOLDSTEIN J T MCKENNON NORVAL H PIERCE S. MACQUEEN SMITH CANADA H S BOWRETT ENGLAND A H CREATLEY SCOTLAND A LEE TURNER IRELAND ROBERT H MOORE

SURGERY OF THE NOSE, THROAT AND MOUTH

AMERICA JOSEPH C BECK T MIRA HILL HARRIS THOMAS J HARRIS CHESTERMAN R HOLMES CHEVALIERE JACKSON JOHN K MACKENZIE GEORGE P CLARK JR JOHN I W RHODES AUSTRALIA A J BRADY A L KENNEDY INDIA F O KIRPAL

ABSTRACT EDITORIAL STAFF

DEPARTMENT EDITORS

DEAN D. LEWIS—GENERAL SURGERY

CHARLES B. REID—GYNECOLOGY AND OBSTETRICS

LOUIS E. SCHMIDT—GENITO-URINARY SURGERY

ADOLPH HARTUNG—ROENTGEN LOGY

JAMES P. FITZGERALD—SURGERY OF THE EYE

FRANK J. NOVA, JR.—SURGERY OF THE EAR, NOSE,
AND THROAT

GENERAL SURGERY

AMERICA S. F. ADAMS CLAYTON F. ANDERSON LEWIS W. BACH WALTER J. BARTH GEORGE E. BENTLEY RALPH
B. BETHEA I. EDWARD BIRKHEAD A. W. BRYAN VERNER G. B. RIDEY WALTER C. B. RIST HENRY S. CAPPS FREDERICK
CHRISTOPHER DAVID W. CHILDS LOVELL D. DAVIDSON VIRGIL E. DUDMAN HARRIS G. EDERBOLK J. EARL CLARK
HARRIS W. F. A. GORDON S. FOLLEN L. H. FOWLER F. T. H. DOUGLAS GEORGE HALPERN MCMEIKEN HANCOCK
FRENCH K. H. ASSEL MARCUS H. HOGART MYRLE R. HOOK ROBERT H. IVEY CAROL E. JAMESON MORRIS H. KAHN
SARIEL KAHN DEYON H. KELLER EARL K. LANFORD J. MILES A. H. MAGO J. GEORGE R. McALISTY S. JOSEPH
J. McCOLLUM HOARD A. McKNIGHT BEN MOHRMAN ARTHUR C. MULLER A. B. McKEE OSCAR L. NADGE
WALTER H. KAMMER LOUIS NEUWELT JOHN W. NELSON WILLIAM J. PICKETT O. S. PROCTOR EMIL C. ROBINSON
A. T. ROMANO A. J. SCHOLL J. S. S. SCHROETER STANLEY J. SEIDER WILLIAM E. SUCALCITO ARTHUR L. SHERK
MER. KELLOGG SPENCER CARL R. STEINER PAUL W. S. RYAN EDWIN R. TALBOT SCOTNEY B. TRAYNOR HARRIS
UNDERLEIDER BEN N. WADE RONCO C. WELSH C. CORBIN VANCE ENGLAND JAMES E. ADAMS PIERCEAL
COLLE ARTHUR EDMONDS WILLIAM GILLIATT FRANK P. GOULD I. H. HUGHES ROBERT I. KELL T. B. LEO B.
C. MAYHEW FELIX ROOD L. G. SCHLESINGER B. SANDHUR SEMONDS HAROLD UCCOTT O. G. WILLIAMS SCOT
LAND JOHN FRANKER A. P. MITCHELL BEN WADE D. P. D. WILKIE IRELAND R. AYLING STONEY

GYNECOLOGY AND OBSTETRICS

AMERICA LEWIS W. BACH I. EDWARD BIRKHEAD ROY F. CHRISTIE EDWARD L. CORNELL CARL H. D. VAN SALL
JOHN DE PALMA VIRGIL E. DUDMAN HARRIS G. EDERBOLK HARRY W. FINE RONCO JEFFREY HARVEY B. ISA
TERRY R. YAMOND E. W. THOMAS CANADA JAMES R. GOODALL H. M. LITTLE ENGLAND HAROLD CHAMPLE
HAROLD CLIFFORD F. H. LACE W. FLETCHER SMITH CLIFFORD WHITE SCOTLAND H. LITTLE MURRA J. H.
WILKIE IRELAND BETHEL SOLOMONS

GENITO-URINARY SURGERY

AMERICA JAMES D. BARKLEY JOHN G. CHESTNUT THEODORE DRESDEN JR. JOSEPH S. EISENSTADT THOMAS
F. FINEGAN HARRY A. FOWLER LOUIS GEORGE EDWARD F. HENNE C. D. HOLMES HERMAN L. KRETSCHMER VICTOR
D. LEPPINARIS JAMES A. H. MAGO J. OSCAR E. NADGE LOUIS NEUWELT CLARENCE R. O. CROWLEY JOHN P.
O'NEIL CLAUDE D. PICKERELL HARRIS W. PLACHEMYER BENJAMIN F. ROLLER HENRY L. SANFORD GILBERT
J. THOMAS HENRY W. E. WATKINS

ORTHOPEDIC SURGERY

AMERICA ELVIN J. BERKESHEIMER M. URICK A. BERTIN F. W. CARRUTHERS WILLIAM A. CLARK DEYON
W. CHILDS ROBERT V. FURNER DAVID H. LEVINTHAL PHILIP LEWIS JOHN MITCHELL BEVERIDGE H. MOORE
FRANK G. MURPHY JOHN W. POWERS LOVELL D. PRINCE RUDOLPH S. REICH DAVID R. TILSON S. C. WOLDEN
REID CANADA D. GORDON F. ENGLAND HOWARD BUCK E. ROCK CARLING N. DUNSTON DUNN E. LAM
INGE AND W. H. HALL T. P. McMEIKEN JOHN MORLEY CHARLES ROBERTS G. D. TELFORD

ABSTRACT EDITORIAL STAFF—CONTINUED

ROENTGENOLOGY AND RADIUM THERAPY

AMERICA DVID R BOW W L BIRD ADOLPH HA TUNG C H HENKOCK ALONSTON J LARKE

SURGERY OF THE EYE

AMERICA THOM D VALL A B DYKEMA J WES P FITZGERALD SPENCER S HOW S A SCHULTER VERNON
WELSHOTT C CORRI YANCEY ENGLAND F J CONNORIAN M L H PRYCE FOSTER MOORE SCOTLAND
JOSEY PEARSON ARTHUR H SUGLATE RANER H TRAQUAI JAMES A WILSON

SURGERY OF THE EAR

AMERICA JAMES C BRAS EL J GUY L BOYDS MAURICE H COTTLE FRANK A HANSEL FRA J
NOVAK J OTTO M ROTT I P SCHWENKE W B SEA CANADA W H JARVIS ENGLAND G J JEN
KIN SCOTLAND J B FRASER IRELAND T O GRAHAM

SURGERY OF THE NOSE, THROAT AND MOUTH

AMERICA G Y L BOYMAN J ES C BEE EL J MAURICE H COTTLE M THOMAS N JADAMUSZEL FRANCE
K HANDEL FRA J NOVAK J OTTO M ROTT I P SCHWENKE W B SEA AUSTRALIA A MUNRO
INDIA JOSE T M RNEY

JANUARY 1973

International Abstract of Surgery

Supplementary to
Surgery, Gynecology and Obstetrics

EDITORS

FRANKLIN H. MARTIN Chicago
SIR BERKELEY MOYNIHAN K.C.M.G. C.B. Leeds
PAUL LECENE Paris

GEORGE DE TARNOWSKY Abstract Editor

DEPARTMENT EDITORS

DEAN D. LEWIS, General Surgery	ADOLPH HARTUNG Roentgenology
CHARLES B. REED, Gynecology and Obstetrics	JAMES P. FITZGERALD Surgery of the Eye
LOUIS E. SCHMIDT Genito-Urinary Surgery	FRANK J. NOVAK, J. Surgery of the Ear
JOHN L. PORTER, Orthopaedic Surgery	Noise and Throat

CONTENTS

- I. Index of Abstracts of Current Literature
- II. Authors
- III. Collective Review
- IV. Abstracts of Current Literature
- V. Bibliography of Current Literature

Editorial communications should be sent to Franklin H. Martin, Editor 30 N. Michigan Ave. Chicago
Editorial and Business Office: 30 N. Michigan Ave. Chicago Illinois, U. S. A.
Publishers for Great Britain: Baillière, Tindall & Cox, 6 Henrietta St. Covent Garden, London W. C.

CONTENTS—JANUARY, 1923

COLLECTIVE REVIEW

PLASTIC AND RECONSTRUCTIVE SURGERY OF THE FACE Robert H. Ivy, M.D., F.A.C.S., Philadelphia

ABSTRACTS OF CURRENT LITERATURE

GENERAL SURGERY

SURGICAL TECHNIQUE

Operative Surgery and Technique

- ARMSTRONG, J. AND ALCOCK. Crushing Operations in Gastrointestinal Surgery. Experimental Research.
LACOUTURE. The Formation of an Artificial Vagina by the Transplantation of a Loop of Intestine.
CAMP, C. U. A New Method for the Surgical Treatment of Congenital Vaginal Anomaly.
GOLDFINGER, J. A New Procedure for the Formation of a Sphincter for the Bladder.

Anesthesia

- LEVINE, F. C. AND HALL, H. N. Post Transfusion Reactions: Alterations in the Blood After Ether Anesthesia. I. After Blood Transfusion.

SURGERY OF THE HEAD AND NECK

Head

- WALKER, F. I. The Surgical Anatomy of the Superior Sagittal Sinus.
DIXON, W. F. An Operation for the Total Excision of Tumors in the Cerebellum and Cerebellar Agenesis. A Preliminary Report.
RAVENHILL, J. L. Occipital Encephalocele.
ABNEY, A. W. Preservation of the Motor Root of the Cervical Ganglion During the Division of the Sensory Root for Trifacial Neuralgia.
FRANK, H. J. Chronic Suppurative Proctitis with Acute Abscesses.
LEITCH, J. Congenital Esophageal Malformation of the Cervix. A Case.
The Treatment of Cancer of the Esophagus.

Neck

- TYLER, M. B. The Final Result of Treatment in Certain Forms of Metastatic Cancer of the Neck.

SURGERY OF THE CHEST

Chest Wall and Breast

- DICK, L. K. Excision in the Management of the Cervical Esophagus.

- SOX, A. Contribution to Our Knowledge of Mediastinal Tumors.

- HOERNIGLE, E. A Teratoma of the Anterior Mediastinum.

- LEAVITT, P. H. Tuberculosis of the Breast with the Report of Two Cases.

- BATES, F. L. The Final Result of Operations for Cancer of the Breast.

Trachea and Lungs

- MARSHALL, H. Tracheal Resection and Tracheoplasty with Special Consideration of Transverse Resection.

- METZ, W. The Establishment of Temporary or Permanent Peduncular Lip-Fistula in the Conservative Treatment of Advanced Bronchiectatic Lung Abscess.

- SCHLAEPFER, H. An Embolism Following Various Diagnostic or Therapeutic Procedures in the Area of the Pleura and the Lung.

Heart and Vascular System

- VOY, ALBERTINI, A. Partial Rupture of the Heart and Its Mechanism.

- WILLIAMS, D. S. AND GRAM, F. A. Intracardiac Surgery—A New Method. Preliminary Report.

Pharynx and Esophagus

- BRICK, O. The History of Retropharyngeal Abscesses.

- LOTHRIEN, C. Plastic Repair of the Esophagus Particularly from the Omoch.

- LEITCH, H. Carcinoma of the Thoracic Esophagus.

- HENRI, C. A. Combined Transpleural and Transperitoneal Resection of Thoracic Esophageal Cancer with the Caria for Carcinoma.

SURGERY OF THE ABDOMEN

Abdominal Wall and Peritoneum

- CLEGG, T. S. Further Notes on the Management of the Abdominal Wall.

Gastro-Intestinal Tract

- JUDE, E. S., and LONS, J. H. Resection of the Body of the Stomach for Ulcer. Report of Series of Cases with End Results 5
- HOLZWEIN, M. The Formation of Peptic Ulcer in the Jejunum 9
- CANOVER, A. M. Foreign Bodies in the Intestine. A Rare Diagnostic Error 20
- HUTTEL, T. Primary Sarcoma of the Intestine 20
- WARRANT, F. C. and LAMPERT, M. Penetrating Wound of the Peritoneum with Penetration of the Intestine 20
- POREVOY, A. L. Prognosis of the Proximal Portion of the Colon from the Clinico-Surgical Standpoint 20
- DOORNBOSCH, W. Extirpation of the Transverse Colon with the Carcinomatous Stomach 20
- HIRSCHMAN, L. J. The Value of Temporary Colonostomy 20
- JONES, D. F. and MCKITTERICK, L. S. End Results of Operations for Carcinoma of the Rectum 2

Liver, Gall-Bladder, Pancreas, and Spleen

- RICKLE, R. A Contribution to the Surgery of Injuries to the Liver 3
- MARTENS, E. Anatomical Bases for Resections on the Liver 3
- MOORE, F. D. The Associated Pathology of Gall Bladder Disease with Further Plans for Cholecystectomy 3
- LECHER, P. and DALLMANN, G. The Repair of the Principal Bile Duct or Its Implantation into the Gastro-Intestinal Tract in Difficult Cases 24
- ZORNFELT, H. Preliminary Stages of Acute Necrosis of the Pancreas and the Advantages of Early Operation in Cholelithiasis 24
- LIVINSKY, F. C. A Case of Multiple Pancreatic Calculi. Removal and Recovery 24

SURGERY OF THE EXTREMITIES

Conditions of the Bones, Joints, Muscles, Tendons, Etc.

- BLOOMBERG, J. C. Tumors of Bone 5
- PERNA, G. The Ossification of the Vertebral and the Significance of the Septa Vertebralis Tubercle in Man 5
- ALBERT, O. The Metatarsophalangeal Syndrome of Korkler 5
- KOTE, P. B. Two Cases of New Metatarsal Disease 5

Fractures and Dislocations

- SCHLEGEL, A. An Unusual Case of Retrosternal Dislocation of the Clavicle 25
- SAYRE, F. D. Fracture-Separation of the Lower Humeral Epiphysis 25
- MARTIN, F. Traumatic Dislocation of the Hip in the Child 25
- EFFENDY, G. I. The Surgical Treatment of Habitual Dislocation of the Hip 20

- KOETTER, J. Deformity of the Head of the Femur as an Obstacle to the Complete Cure of Congenital Dislocation of the Hip 20

SURGERY OF SPINAL COLUMN AND CORD

- GAFFER, C. H. and SEILLER, W. G. An Analysis of Fourteen Consecutive Cases of Spinal Cord Tumor 20

SURGERY OF THE NERVOUS SYSTEM

- SACHS, L. and MALONE, J. V. An Experimental Study of Methods for Bridging Nerve Defects, with Description of New Method of Autotransplant (Auto-Autotransplant) 21
- LA ARJET, A. Resection of the Nerve of the Stomach, Operative Technique and Clinical Results 21

MISCELLANEOUS

Clinical Entities—General Physiological Conditions

- PROCTOR, A. The Secondary Manifestations of Malignant Disease 21
- MAO, C. H. End Results in Cancer as Influenced by Type, Reaction, Location, and Age 23
- Surgical Diagnosis, Pathology and Therapeutics
- THEODORE, C. and BAKER, J. H. The Tetanus Bacillus as an Intestinal Saprophyte in Man 23
- Röntgenology and Radium Therapy
- STEINBOCK, A. The New Röntgen Universal Exposure Table of Fiedler 24
- NICHOLS, B. H. The Röntgen Diagnosis of the More Important Tumors of the Long Bones 24
- CHU, Y. T. W. The Röntgenological Aspects of Achylia Gastrica 25
- DREHNER, J. ACHTERBERG, and MORITZ-KAUF, A. New Method for the Röntgenological Examination of the Kidney—Pneumonephrosis 26
- ROTHSCHILD, L. The Röntgen Treatment of Frostbite 26
- CASE, J. T. Technical and Clinical Aspects of the New Deep Röntgenotherapy 26
- MARTIN, C. L. and UNLIER, C. Röntgenotherapy of Intracranial Phlegmas Following Spinal Anesthetics 27
- SANDHORN, C. M. The Ultraviolet and the Röntgen Ray—Physiological Complements in Therapeutics. A Newly Established Clinical Treatment 20
- PRENDERGAST, E. P. HAYMA, J. M. J. HOTTEN, K. I. and RABSON, V. C. The Effect of Radium on the Normal Tissues of the Brain and Spinal Cord of Dogs, and Its Therapeutic Application 29
- SCHILL, A. J. and BRANSON, W. F. Pre-Operative Treatment of Malignant Tumors of the Bladder by Radium 29

GYNECOLOGY

- Uterus**
- 4 ARSOLD, C. G. Uterine Prolapse and Associated Pelvic Relaxation 43
- 4 VOLT, E. The Significance of Anomalous of the Uterine Vessels as Indicated by an Arteriographic Anomalous of the Uterine Artery and Vessels Due to an Aerial Bomb Injury 43
- 41 POLAK, J. O. MITCHELL, E. A. and McGRATH, A. B. What Is the Relation of Hypertension to Fibroid Disease of the Uterus 43
- 41 VON OSTENFELD, H. The Indications for Total Ablation in Certain Cases of Rupture of the Uterus 43
- 41 TAYLOR, L. Irradiation and Proliferation of Uterine Fibromata 44
- 4 DAVIS, L. End Results of the Surgical Treatment of Carcinoma of the Cervix Uteri 44
- 41 MEXIC, J. V. A Study of Adenocarcinoma of the Fundus of the Uterus 44
- Adnexal and Peri-Uterine Conditions**
- 41 DORLAND, W. A. N. A Clinical and Embryological Report of an Extremely Early Tubal Pregnancy Together with Study of Decidual Reaction, Intra Uterine and Ectopic 43
- 41 DONALD, A. Adenomyoma of the Rectovaginal Space and Its Association with Ovarian Tumors Containing Tarry Material 43
- 41 SAMPSON, J. A. Isthmic Adenomyoma of the Endometrial Type: Their Importance and Their Relation to Ovarian Hematomata of the Endometrial Type (Perforating Hemorrhagic Cysts of the Ovary) 43
- 41 SEAW, W. F. and ANDER, W. R. Adenomyoma of the Rectovaginal Space Associated with Tarry Cysts Arising in Islands of Adenomyomatous Tissue in the Ovary 43
- 41 PROBYN, A. Results of the Surgical Treatment of Long Standing Tumors of the Vagina 43
- 41 **External Genitalia**
- 41 LAGOUTTE, The Formation of an Artificial Vagina by the Transplantation of Loop of Intestine 44
- 41 CAMERA, U. A New Method for the Surgical Treatment of Congenital Vaginal Atresia 44
- Miscellaneous**
- 41 BIRD, F. D. Not on Form of Pelvic Hydatid Cyst and Its Treatment 44
- 41 YOUNG, J. V. Intermittent Asphyctic Hyperemia in Gynecology 44
- 41 ALBERT, The Douglas Cry in Women 43
- 41 NACHREINER, Malignant Chorionic Epithelioma with Hemorrhage into the Abdominal Cavity 43
- 41 MACDONALD, D. The Etiology of Sterility in the Female from an Analysis of 500 Case Records 43
- 41 POWELL, L. A. and MILLARD, F. W. A Case of Primary Carcinoma of the Female Urethra Treated with Radium 43

GENITO URINARY SURGERY

- Adrenal, Kidney and Ureter**
- 41 DELBECK, LAUCHLIN, and MORSE-KAPLAN, A. New Method for the Roentgenological Exploration of the Kidney—Pneumoperitoneum 49
- 41 B. LANC, W. F. and SCHOTT, A. J. J. Pathological Complications with Duplication of the Renal Pelvis and Ureter (Double Kidney) 47
- 41 REYNOLDS, B. Hematogenous Acute Infectious Nephritis and Pyelonephritis 47
- 41 M. BEN, J. M. and SMITH, A. L. The Diagnosis and Treatment of Pyelitis 43
- 41 KATUTAMA, N. H. A. R. Studies in Ureteral Catheterization Preliminary Report 49
- Bladder, Urethra, and Penis**
- 41 GOSVITNER, J. A New Procedure for the Femoral Loop of Sphincter for the Bladder 49
- 41 SCHOLL, A. J. and BRADSHAW, W. F. Pre-Operative Treatment of Malignant Tumors of the Bladder by Radium 49
- 41 LOWER, W. E. The End Result of Operations for Cancer of the Bladder 5
- 41 FROMSTEN, R. M. Gunshot Injuries of the Urethra and Their Treatment 5
- Genital Organs**
- 41 CHEN, M. W. The Operation of Levator into the Scrotum the Testicle Retained in the Inguinal Canal 5
- 41 KETTERER, F. and VASOVITZ, S. The Local and General Effects of Resection of the Deferent Canals 5
- 41 RAFTIN, F. W. and JUDY, F. S. Empyema of the Scrotum the Result of Diverticulitis of the Scrotum with Perforation 53

SURGERY OF THE EYE AND EAR

Eye		BUTLER, T. H. The Influence of Trauma upon the Onset of Interstitial Keratitis	53
JANAKO, P. C. The Correction of Squint by Muscle Recession with Scleral Suturing	54	VALLEY, F. H. and LEBOWITZ, A. V. Hyper-sensitiveness to Lens Protein, Cataract Operation	55
FRA, L. W. S. and COHEN, F. C. An Unusual Orbital Tumor	54	HA THORAC, C. O. Observations on the Significance of Retinal Hemorrhages	55
PARRY, J. M. The Localization and Extraction of Intra-Ocular Foreign Bodies	54		

SURGERY OF THE NOSE THROAT AND MOUTH

Nose		BYLLE, D. Resection of the Superior Laryngeal Vertebra Tuberculosis of the Larynx	57
WOJASCHKE, W. J. Polyps of the Base of the Skull	56	Mouth	
SWENSSON, L. Intracranial Cephaloceles	56	LOWERY, E. Congenital Labiopalatine Malformations	5
Throat			
BROCK, O. The Etiology of Retropharyngeal Abscesses	5		

BIBLIOGRAPHY

GENERAL SURGERY

Surgical Technique		Blood	65
Operative Surgery and Technique	58	Blood and Lymph Vessels	65
Aseptic and Antiseptic Surgery	5	Surgical Diagnosis, Pathology, and Therapeutics	65
Anesthesia	58	Experimental Surgery and Surgical Anatomy	65
Surgical Instruments and Apparatus	53	Röntgenology and Radium Therapy	65
Surgery of the Head and Neck		Industrial Surgery	66
Head	58	Hospitals, Medical Education and History	66
Neck	59	Legal Medicine	67
Surgery of the Chest		GYNECOLOGY	
Chest Wall and Breast	59	Uterus	67
Trachea and Lungs	60	Abdominal and Pelvic Uterine Conditions	67
Heart and Vascular System	60	Internal Genitals	67
Pharynx and Esophagus	60	Miscellaneous	67
Surgery of the Abdomen		OBSTETRICS	
Abdominal Wall and Peritoneum	60	Pregnancy and Its Complications	68
Gastro-Intestinal Tract	60	Labor and Its Complications	68
Liver, Gall Bladder, Pancreas, and Spleen	6	Puerperium and Its Complications	68
Miscellaneous	6	New-Born	68
Surgery of the Extremities		Miscellaneous	68
Conditions of the Bones, Joints, Muscles, Tendons, Etc.	61	GENITO-URINARY SURGERY	
Fractures and Dislocations	61	Adrenal, Kidney and Ureter	69
Surgery of the Bones, Joints, Muscles, Tendons, Etc.	64	Bladder, Ureters, and Penis	69
Surgery of the Central Nervous and Cord	64	Genital Organs	69
Surgery of the Nervous System		Miscellaneous	70
Miscellaneous		SURGERY OF THE EYE AND EAR	
Clinical Pathology—General Physiological Conditions	65	Eye	70
Sera, Vaccines and Ferments	6	Ear	7
		SURGERY OF THE NOSE, THROAT AND MOUTH	
		Nose	71
		Throat	7
		Mouth	7

AUTHORS

OF THE ORIGINAL CONTRIBUTIONS WHICH ARE ABSTRACTED IN THIS NUMBER

- Abadie, #
 Addis, W. R. 43
 Adams, A. W.
 Albert, O. 27
 Alberts, 45
 Allen, D. S. 5
 Arnaud, #
 Arnold, C. G. 4
 Bauer, J. H. 21
 Beck, O. 5
 Bird, F. D. 44
 Bink, D. 57
 Bloodgood, J. C. 3
 Brunsch, W. F. 47 49
 Burt, F. E. 3
 Butler, T. H. 55
 Camner, U. 44
 Canales, A. M. 20
 Case, J. T. 36
 Cheson, W. 5
 Cordes, F. C. 54
 Crane, A. W. 15
 Cullen, T. S. 7
 D'Aquino, G. 24
 Dandy, W. E. 9
 Davis, L. 42
 DeBarn, 36
 Donah, A. 43
 Dorfman, W. A. M. 43
 Dunham, E. K.
 Edberg, E.
 Epstein, G. I. 20
 Franklin, W. S. 54
- Fraser, C. H. 30
 Fromster, R. 31 5
 Goljanitski, J. 49
 Graham, E. A. 5
 Hawthorne, C. O. 55
 Hayman, J. M. 39
 Hedblom, C. A. 6
 Hirschman, L. J.
 Hoernicke, E. 3
 Holmstrom, M. 9
 Homan, K. M. 39
 Huettl, T. 20
 Ivy, R. H.
 Jameson, P. C. 54
 Jones, D. F. 3
 Judd, E. S. 8, 53
 Kopitz, J. 29
 Kretschmann, H. A. R. 49
 Lagoutte, 44
 Lampert, M. 20
 Laquerrière, 6
 Latarjet, A. 31
 Leavitt, P. H. 3
 Levine, P. 24
 Lemoine, A. N. 55
 Levine, E. C. 8
 Libenthal, H. 6
 Lindsey, E. C. 5
 Lotherness, G. 6
 Lower, W. E. 50
 Lyons, J. H. 8
 Macomber, D. 45
- MaSci, F. 28
 Malone, J. Y. 3
 Marchuk, H. 3
 Martens, E. 3
 Martin, C. L. 28
 Mayhew, J. M. 48
 Mayo, C. H. 33
 McGrath, A. B. 4
 McKinnick, L. S. 3
 Mengs, J. V. 4
 Meyer, W. 4
 Milward, F. W. 45
 Mitchell, E. A. 4
 Moore, F. D. 24
 Morel Kahn, 36
 Naeppelbach, 45
 Nichols, B. H. 34
 Noordenbos, W.
 Ochsmar, A. J.
 Patton, J. M. 54
 Pendergram, E. P. 30
 Perna, G. 26
 Pohl, J. O. 4
 Polonoff, A. L.
 Pomeroy, L. A. 45
 Pomeroy, A. 3
 Probstner, A. 43
 Profaat, H. J.
 Rambo, V. C. 20
 Rankin, F. W. 53
 Ranschoff, J. L.
 Reichle, R. 3
- Retterer, E. 5
 Roth, P. B. 7
 Rothbart, L. 56
 Rumsberg, B. 47
 Sachs, E. 1
 Sampson, C. M. 39
 Sampson, J. A. 43
 Sauer, T. D. 28
 Schaeffer, K. 4
 Schlegel, A. 8
 Scholl, A. J. J. 47 49
 Segall, H. N. 8
 Shaw, W. F. 43
 Smith, A. L. 48
 Some
 Spiller, W. G. 30
 Stenberger, A. 54
 Swensbom, L. 56
 Ten Broeck, C. 33
 Tinker, M. B.
 Tuffler, 42
 Uhler, C. 38
 Verhooff, F. H. 53
 Vogt, E. 4
 Von Albertus, A. 5
 Von Ortenberg, H. 4
 Voronoff, S. 5
 Walker, F. I. 9
 Warrakine, F. C. 20
 Watschek, W. J. 56
 Young, J. V. 44
 Zoepfel, H. 5

INTERNATIONAL ABSTRACT OF SURGERY

JANUARY 1923

COLLECTIVE REVIEW

PLASTIC AND RECONSTRUCTION SURGERY OF THE FACE

By ROBERT H. IVY, M.D. FACE PHILADELPHIA

RECENT progress in the repair of deformities of the hard and soft tissues of the face is due largely to experience gained from the treatment of mutilations of these parts acquired during the World War. The immense amount of clinical material provided opportunities for the thorough testing of already established methods and standardized the application of definite procedures to particular classes of cases. In addition, certain important modifications and improvements over old methods were worked out. Since the war the benefit of this experience is being reflected in the treatment of facial deformities occurring in civilian life. In a previous review (22) the writer covered the available literature on war injuries of the face and jaws, giving an extensive bibliography. In the present article attention will be called to some of the most important recent advances.

CONGENITAL DEFORMITIES

In the last few years several able contributions have been made on harelip and cleft palate. The recent outstanding papers on this subject are those by J. E. Thompson and V. Veau and his collaborators. Thompson (38) states that the principles of treatment of cleft palate are founded on accurate knowledge of the anatomy of the deformity in other words, on a correct estimate of the degree of distortion. In regard to complete unilateral cleft palate and harelip, he concludes:

1. If embryonic union fails, the resulting deformity seen at birth can be accounted for in every detail by the muscular action of the tongue

2. There is little or no separation from one another of the posterior ends of the maxillae and any movement here is in the nature of a hinge movement by which the posterior end of the maxilla and the vertical plate of the palate bone swing on their attachments to the pterygoid processes of the sphenoid.

3. The side to which the premaxilla and the septum are attached (the larger side) is more affected by the tongue thrust than the other maxilla, the result being that its anterior end swings outward and forward, taking with it the septum and nose and carrying the alveolar border to a plane far outside and in front of its normal position and further the attachment of the septum to the palatal plate has enabled it to withstand the vertical thrust of the tongue and to retain a reasonably good horizontal position.

4. The other maxilla (the smaller side) is displaced as a whole very slightly in a lateral direction, but its horizontal palatal plate is seriously deformed, being frequently thrust upward into a vertical position against the turbinate bone.

Thompson employs the usual Langenbeck lateral incisions, and achieves approximation of the two sides of the soft palate without tension by dividing the levator palati and palatopharyngeus muscles from the nasal aspect. The paper sets forth very clearly the author's rules for undertaking repair in two, three, or four stages.

During 1921 and 1922 Victor Veau, of Paris, was responsible for a series of remarkable papers dealing with harelip and cleft palate. For unilateral harelip (43-46) he employs Jalaguier's modification of the Murel operation, a method

which has not the wide recognition it merit and produces far better results than the usual curved or angular freshening of each edge of the cleft. Veau and Lacombe (50, 44) also have a valuable paper on the operative treatment of double harelip. In his work on cleft palate Veau (4, 45) begins with a critical review of eighty-nine cases operated on by the classical Langenbeck Treitz procedure and shows that this method does not yield the uniformly good anatomical result and more particularly the good functional result to be expected of a satisfactory method. The outcome in the eighty-nine cases was as follows:

Single operations
Complete closure 48 per cent
Partial union 35 per cent
Complete failure 5 per cent

General operations
Complete closure 74 per cent
Partial union 1 per cent
Complete failure 6 per cent

Effect on speech
Spontaneous improvement, 5 per cent
Improvement by education, 5 per cent
No improvement, 60 per cent

These rather discouraging results led Veau to investigate the surgical anatomy of cleft palate with a view to discovering if possible the causes of failure and a basis for the introduction of new operative principles. His studies (48) show that in infants with cleft palate there is no failure of development of the muscles of the soft palate and it is not until later as the result of disuse that atrophy occurs. To be useful, a soft palate must be mobile and long. The majority of soft palates that have been operated on are rigid and short. Section of the muscles of the soft palate is the chief cause of immobility. Centric contraction due to the production of a large raw surface on the nasal aspect is the chief cause of shortening. Veau (49) believes he has succeeded in part at least, in overcoming these two great hindrances to success in the classical operation. In order to approximate the edges of the soft palate cleft without tension he does not resort to section of the levator palati and palatopharyngeus muscles, but after separating the aponeurosis of the tensor palati from the posterior edge of the hard palate and dividing the tendon of this muscle through a small incision over the hamular process, he holds the two halves of the soft palate together by a horizontal suture wire passed through the muscle substance from side to side. The wire does not perforate the mucous membrane, which would not tolerate it well, but its two ends are twisted and

emerge through one of the lateral nostrils. wire never tears in the muscle and perforation comes tension at the same time perky treatment of the soft palate. Avoidance of raw surface is more difficult. Instead of incising the mucosa where it is attached to the posterior edge of the hard palate, as is usually done by lowering and approximation of the two mucosal flaps separated from the bone, Veau raises the mucosa of the floor of the nose and then on the oral side near the edge of the cleft around the posterior edge of the hard palate, obtaining two mucous layers (upper and lower) for closing the cleft. The nasal mucosa is elastic and can often be drawn readily across the cleft to be sutured to that of the opposite side. The nasal layer is sutured first and the oral mucosa is sutured in a separate layer. The accumulation of infective secretions through the oral mucosa is sutured in a separate layer. Complete closure of this layer is not always possible, but this is not so important, as granulations on the oral surface do not cause so much trouble as those on the nasal side. Veau's paper which was read before the Paris Surgical Society, provoked a lively discussion by Jakschitz (53), Broca (54), Ombredanne (59) and others. Ombredanne states that rigidity of the soft palate after operation is due partly to infection from the wound and partly to an interstitial cicatricial contraction. He finds that sphincteric exercises are very useful in preventing rigidity of the palate muscle and employs them whenever the patient is old enough commencing about three weeks after the operation.

Ombredanne (30) corrects deformity of the nostril in harelip cases by removing a small triangular wedge of skin and cartilage from the anterior edge of the nasal opening.

Coughlin (12) reports successful closure of a very wide congenital cleft of the hard palate by means of a pedicled flap of skin from the chest, which a piece of costal cartilage cut to fit the opening had been embedded previously.

Among other noteworthy contributors to the subject of cleft palate and harelip are Davis (3), Kellack (4), Brown (6) and Moorehead (56).

ACQUIRED DEFECTS

The introduction by Gillies (19) of the tubed pedicle made possible the transfer of skin flaps for a greater distance and of larger size, thus putting within the range of surgical repair deformities hitherto regarded as inoperable. Blair (5) achieves the same results by the delayed transfer method. If first

1. That the chance of success of a flap is increased or a longer flap can be raised, or the flap can be cut narrower and thinner with equal chance of success if it is first completely raised and then immediately sutured back into its original bed and the transfer to the new position delayed for a period ranging from six days to two weeks.

2. That if a flap sloughs in its original bed, the extent of the area lost will be considerably less than if it had been immediately transplanted.

3. That if a flap will not survive, it is an advantage to have this fact demonstrated before removal of the scar and freshening of the edges of the defect.

4. That provision for a possible partial loss can usually be made in the planning of the flap.

5. That a blood clot under a flap which has been sutured back into place may be fatal to the flap. The formation of such a clot can be prevented by moderate pressure of the dressings and the use, for twenty-four hours, of multiple drains.

In many cases of very large defects Dufourmentel (15, 16, 17) Sébileau (35) and Moure (17) have made use of very long bands of skin with pedicles at each end assuring adequate vascularization and innervation. For reconstructing the entire upper lip, a complete band of skin is removed from the neck, but left attached at each end and turned up over the chin and lower lip. This is preferred to taking half of the new lip from the right and half from the left. Later the mucous surface is supplied by a second bipediced band of mucous membrane from the lower lip. In other cases the bipediced skin flap is taken from the scalp, the pedicles being in the temporal region. The hair of the scalp replaces the beard and mustache and hides the operative scars.

FREE SKIN GRAFTS

In reconstruction surgery of the face two types of free skin transplants are employed, the Thiersch-Esner or epidermic graft and the Wolfe or full thickness graft. Esner and later Waldron, Pickenill and Gilhes (19) adapted the Thiersch graft for replacing mucous membrane lining cavities (the mouth, nose, eyelids, etc.) with skin, the thin skin shaving being temporarily supported on a mold of dental impression compound. Ferris Smith (36) has utilized this method even for relining the antrum of Highmore after removal of the diseased mucous membrane. The Wolfe graft is particularly useful for covering the secondary defect produced by removal of a pedicled flap, for instance, to replace skin of the forehead which has been employed to reconstruct the nose. The Wolfe graft can be taken from some distant part

of the body such as the abdomen. It should include the full thickness of the skin, but all subcutaneous fat should be carefully removed. Ferris Smith (36) disputes the soundness of the almost universal practice of cutting full-thickness grafts larger than the size of the area to be covered. In his opinion such a graft should be cut exactly to pattern, sutured accurately and maintained with a light, even pressure. Keller and Parce (31) support their full thickness grafts by means of dental impression compound, as in the Esner method.

Practically all of the modern principles of surgical reconstruction of the face are exemplified in an article by Blair (3) which is very clearly illustrated by photographs and diagrams. Although this article is devoted to the repair of war injuries, it contains a wealth of material of great value to the plastic surgeon in the correction of deformities seen in civil practice.

ATRESIA OF THE BUCCAL ORIFICE

Atresia of the buccal orifice may be congenital or a sequel of lupus, noma, syphilis, or epithelioma, but most frequently is the result of burns of the face. Rouget (34) observes that if it is marked it may prevent the introduction of solid food, interfere with mastication and speech, and render impossible the insertion of an artificial denture to replace lost teeth. The treatment varies with the nature and extent of the lesion. In minor cases, simple section of a band of scar tissue may suffice. Others are benefited by special stretching apparatus. In pronounced cases with the presence of a considerable amount of scar tissue, operation is indicated. The most favorable results are given by the procedure of Diffenbach or its modification by Ombredanne. In Diffenbach's operation a small quadrilateral flap is removed from each corner of the constricted mouth opening. This flap is restricted to the skin and subcutaneous tissue, not including the inner mucous membrane, and externally its upper and lower borders almost meet. The amount of cutaneous tissue removed depends on the amount of enlargement desired. After the cutting of the flap the underlying mucous membrane is divided horizontally so as to bisect the denuded area, and at the outer end of this horizontal incision an incision is made perpendicular to the first but slightly conver medially. These incisions form three small mucous flaps, an upper a lower and an external flap. The upper and lower flaps are sutured to the corresponding skin margins and the external flap is brought out to form the commissure. When mucous membrane is not available for the com-

depends the necessity for supplying any or all of these three. Most writers now agree that skin from the forehead (Indian method) is greatly superior to that from the arm (Italian method) to supply the covering of the nose. According to Smith (36) the Italian method, which consists in fashioning a pedicle on the arm and transferring it later to the nose with the arm immobilized on the head until the new blood supply is established has nothing to recommend it for facial repair and much to condemn it. The position is torture to the patient, there is danger of emboli in the superficial veins of the arm, infection readily occurs from contact with the nose, and dressings are difficult. The supporters of the method can claim only that it prevents scarring of the forehead. This is offset by the fact that the texture of the skin is such that its contrast with that of the face and scalp is very marked. If forehead skin is not available, chest skin should be supplied by the use of Gillies' tubed pedicle. Blair (4) also states that the most dependable tissue for covering the nose and one which can be used also for lining is the skin and subcutaneous tissue of the forehead. The forehead defect can be immediately filled in with a full-thickness skin graft from the abdomen, and when this is carefully done, the repair will be only slightly noticeable. The arm skin transplanted by the Italian method and skin from the chest or the abdomen transplanted by a jump flap do not conform as well in appearance to the normal nasal skin. Small or even quite large flaps can be made from the cheeks, but with less accuracy than from the forehead and the defect is more noticeable. A columella, however, can be made quite well from the upper lip. For replacing lost mucous membrane Gillies (19) suggested covering the under-surface of the forehead flap with a Thiersch graft supported on dental impression compound. Blair (4) finds that such grafts subsequently undergo contraction so great as to demand relining of the nose. He and most other workers rely for this purpose on pedicled flaps of skin from the edges of the defect or the forehead.

There is considerable divergence of opinion as to the best material for the supporting framework of the nose. A few years ago New advocated the use of celluloid. Tieck (39) employs the middle turbinate removed from the same patient, denuded of its mucous membrane, and subjected to sterilization in normal saline at 143 degrees F for 15 minutes. The majority of surgeons employ costal cartilage or rib or a combination of both. Cohen (10) says that cartilage grafts alone never form union with bone and are therefore

never firmly fixed on the nose and are always absorbed to a greater or less degree. Bone grafts from the anterior border of the tibia have also failed in several of Cohen's cases. He finds the ideal substance in this work to be a graft composed partly of bone and partly of cartilage, taken from the seventh or eighth rib. The bony part of the graft is placed above in contact with the frontal and nasal bones, while the cartilage builds out the lower portion of the bridge. Carter (9) also uses a section of the eighth or ninth rib and costal cartilage, preserving the periosteum on the outer surface. He shows cases of union of the rib and frontal bone several years after operation. That cartilage is absorbed in the tissues is contrary to the observations of Gillies (19). Blair (4) and Smith (36) Blair says. The general observation is that transplanted bone without normal function does not survive, and in at least two cases of rib transplant for rhinoplasty that have come under my observation two years later the bone has been completely or almost completely absorbed. On the other hand, my observation is that where perichondrium remains in contact with two-thirds of its circumference, the cartilage will persist. We have one case in which the transplanted cartilage has remained unchanged four teen years. In this connection Smith (36) states:

Free plants of bone with or without periosteum into the soft tissues are slowly absorbed. Cartilage has no blood vessels and lives easily by lymph absorption with or without its perichondrium. It probably grows when its perichondrium remains attached. Cartilage is readily modeled to meet any requirements. Cartilage does not unite with bone, but is held in position by fibrous adhesions. It is the ideal supporting substance." The writer of this review agrees with Gillies, Blair and Smith as to the superiority and permanency of costal cartilage as compared with other supporting substances in rhinoplasty.

BONE GRAFTS

Delageniere, the originator of the osteoperiosteal graft, gives a comprehensive account of the advantages, indications, and technique in a recent article (14). He states that the object of the osteoperiosteal graft is to furnish all the elements necessary for bone formation to any part of the osseous system where these elements are deficient or completely absent. Properly speaking, therefore, it is not a question of a bone graft, but only a graft of the elements indispensable for the formation of a part of a bone or of an entire bone. Thus, in spite of Albee's statements to the contrary any part of the skeleton can be recon-

IV. PLASTIC AND RECONSTRUCTION SURGERY OF THE FACE

- 25 KOMP EY G F Operative treatment of recurrent dislocation of the lower jaw Arch Klin Chir 19 civ, 61
- 26 MOOREHEAD I B The correction of congenital cleft palate and harelip J Am Ml Ass 9 lxvii, 101
- 27 MOUTZ P Scalp flaps in reconstruction of face Presse méd 10 xix, 1
- 28 OUDERVA F L Correction of facial paralysis Presse méd 9 xxix, 61
- 29 OUBRIANNE L Discussion on staphylorrhaphy Bull et mém Soc de chir de P m, 9 xl vi, 74
- 30 OUPPEL A L Reconstruction of nostril in harelip Presse méd 10 xl x, 703
- 31 PARCE A D A Improved method of skin grafting in chir 9 lxxv, 65
- 32 PRAER O The Restoration of Normal Relations in Old and Malunited Fractures of the Mandible Laryng Theme 9
- 33 REIN I Treatment of non union of fractures of mandible by logarithmic loose grafts J Am Ml Ass 9 lxvii, 307
- 34 ROUJ J Atresia of the buccopharynx Restoration mandibulaire 9 8 b 77
- 35 SFALEA P Scalp flaps in reconstruction of face Bull et mém Soc de chir de Paris, 970, xlvii, 371 385 404
- 36 STEIN E Plastic surgery J Am Ml Ass 970, lxxv, 554
- 37 TATLER J J Ununited fracture of the mandible treated by bone graft J Am Ml Ass 9 9 lxvii, 127
- 38 THOMPSON J E The simplification of technique of operations for harelip and cleft palate Ann Surg 9 lxvii, 304
- 39 TICKE G J F Correction of nasal deformities Am J Surg 9 lxxv, 34
- 40 TRASSO A Reconstruction of lower lip by folded cervical flap Presse méd 9 xix, 73
- 41 V. HOOK W Perforated flaps aided by free fat transplantation Med Rec 9 cv, 615
- 42 VEAU V The anatomical and functional results of staphylorrhaphy Bull et mém Soc de chir de Paris 9 xlviii, 357
- 43 VEAU V Correction of cleft hare lip Presse méd 9 9, xlviii, 85
- 44 VEAU V Operative treatment of complete double harelip Ann Surg 9 lxvii, 43
- 45 VEAU V and RUTTER C The anatomical and functional results of rano-staphylorrhaphy by classical procedures Ré de chir 9 xli, 5
- 46 VEAU V and RUTTER C Correction of unilateral harelip Presse méd 9 xix, 3
- 47 VEAU V and RUTTER C Speech training in hare lip and cleft palate cases Odontologie 9 b, 31
- 48 VEAU V and RUTTER C Surgical anatomy of cleft palate J de chir 9 xi,
- 49 VEAU V and RUTTER C Technique of rano-staphylorrhaphy J de chir 92 xi, 3
- 50 VEAU V and LANCOSME J Treatment of complete bilateral harelip J de chir, 92 xix, 3
- 51 WEST C E Experiences with transplant graft for ununited fractures of the mandible Proc ho Soc Med Lond 9 9, xi, Sect Otolaryng

ABSTRACTS OF CURRENT LITERATURE

GENERAL SURGERY—SURGICAL TECHNIQUE

OPERATIVE SURGERY AND TECHNIQUE

Abedie and Angood: Crushing Operations in Gastro-Intestinal Surgery; Experimental Research (L'incisement en chirurgie gastro-intestinale: recherches expérimentales). *Bull Acad Sci Med* Par 9, 1934, 6

In experiments on dogs the authors found that, far from causing necrobiosis, crushing methods seem to stimulate multiplication of cells so that the denuded parts are covered more quickly than when simple suture is used.

The objection that the dead tissue produced disturbs cicatrization was not supported by the investigations. Neither was it found that the procedure favored infection.

The experimental work comprised (1) suture of the sectioned stomach without crushing (2) suture of the stomach over the Mayo crusher (3) Mayo crushing of the duodenum with occluding plastic (4) experiments with the Martel crusher and (5) crushing of the intestine with ligation and a buried pursestring suture.

When crushing was done consolidation resulted at the end of five days with the exception of healing of the mucosa the mucosa was healed in twelve days. Chronic catgut alone was used for suturing. Ligation of the intestine over the crushed part followed by the insertion of pursestring buried suture has no more value than the ordinary suture row which causes a less voluminous longitudinal scar toward the intestinal lumen.

In the authors' opinion the Martel technique gives more uniform and quicker results than the Mayo technique of suturing over the crusher. If the Mayo method is employed a superficial row of sutures should be placed over the crushed part before the buried row. W. A. BARNES

ANESTHESIA

Leykoe, E. G. and Segall, H. N.: Post Transfusion Reactions: Alterations in the Blood After Ether Anesthesia and After Blood Transfusion. *Surg Gynec & Obst* 62:2 1935 33

In spite of posttransfusion tests to determine the compatibility of the donor's and recipient's bloods, post transfusion reactions continue to occur.

The authors report three cases which show that long operation under ether anesthesia alters the hemo agglutination properties of the patient's serum. In such cases the blood serum withdrawn immediately after the operation had a pinkish tinge and

agglutinated the donor's corpuscles. This change disappeared during the first twenty-four hours after the operation, at about the time of the patient's recovery from the effects of the ether anesthesia. The authors attribute it to

Lipoids liberated from the tissues and taken up by the blood. When the lipoids are excreted from the blood, the serum behaves as before operation.

The organic products of surgical shock which may temporarily alter the hemo agglutination

3 The ether present in the blood. This hypothesis is supported by the pinkish tinge in the serum due to hemolysis of the red blood cells which is probably caused by the ether. Ortel suggests that ether as a lipid solvent alters the colloidal state of the blood and thus affects the hemo-agglutination and hemolysis phenomena which are also colloidal reactions. Supporting this theory is Broer's observation that the blood Wassermann reaction is interfered with by substances which change the colloidal state of the blood.

For postoperative transfusion after prolonged anesthesia the authors believe it is essential to match the patient's serum with the donor's red cells and vice versa after operation, even when they have been matched previously. The sample of blood serum from the patient must not be taken before the end of twenty-four hours. This necessitates postponing the transfusion twenty-four hours. During the interval the patient may be benefited with glucose or saline injections.

In the treatment of various diseases multiple transfusions from a given donor to a given recipient may cause the development in the blood of the latter of specific agglutinins and hemolysins against the donor's cells which are not present originally. Cases have been known in which post-transfusion reaction followed a second or subsequent transfusion when the blood had been matched and there had been no reaction following the first transfusion. Blood tests showed an agglutinative or hemolytic reaction.

It is important to know whether the reaction is associated with any change in the group of the recipient. Stearns, Fortune, and Ferry concluded from review of 380 transfusions that subsequent donations of blood by a given donor to a given recipient tend to increase the frequency of reaction in direct proportion to the number of the transfusions, and that repeated transfusions from several donors to a given recipient tend to increase the frequency of reaction in the recipient. McIsaac

Stearns, Fortune and Ferry found that donors differed considerably in their tendency to produce reactions.

A post-transfusion reaction suggests anaphylactic shock. The first transfusion induces the hyper-susceptibility of the recipient's serum against the donor's cells.

Robertson and Rous state that in cases of repeated transfusion it is necessary to test for auto-agglutination in the recipient blood. They point out also that serum separated at 37 degrees C. contains more agglutinins than that separated at room temperature,

whereas agglutination is more marked at room temperature.

The authors conclude that the compatibility of the recipient and donor's bloods must be determined prior to every transfusion. That a transfusion should be done within twenty-four hours of prolonged ether anesthesia even when the donor has been found suitable previous to the induction of anesthesia, and that it is best to make both the indirect test to determine the group of the donor and recipient and the direct test to corroborate the compatibility of the bloods. WALTER C. BRUNER, M.D.

SURGERY OF THE HEAD AND NECK

HEAD

Walker F. L. The Surgical Anatomy of the Superior Sagittal Sinus (Zur chirurgischen Anatomie des Sinus sagittalis superior). *New York Arch.* 9, 2, 1, 6.

Three venous sinuses of the dura mater are of typical importance: the sagittal, cavernous and transverse sinuses. The sagittal sinus, which is located in the falxiform process, has been studied the least. This sinus is generally triangular and receives the upper cerebral veins, the veins of the dura and the cranial bones. The conditions found are not always as they are described in textbooks on anatomy.

In rare cases the sagittal sinus is entirely absent (Portia, Veurel). More frequently it is split into two parts by a partition (Knott, Viegand, Assur, Thele).

The pachymenian granulations of the sagittal sinus have often been studied. The question regarding the pathologic or normal origin of these structures has been answered in many ways, but T. Ward (1890) was the first to advance the now generally recognized theory that these structures are normal. The author's own investigations were based on 100 specimens of the sagittal sinus obtained from male and female cadavers of different ages, beginning with early infancy. After the skull had been measured and the vault of the cranium removed, the sagittal sinus and its lacunae were studied and measured.

Regardless of the variations in the findings, two main types of the sagittal sinus were determined: (1) the simple type with straight outlines and weakly developed lacunae; and (2) the lacunar type with markedly indented lacunae. The lacunae usually vary in size between 1 and 3.5 cm. in some cases they may measure as much as 6 cm. According to their position they may be classified as anterior, middle and posterior. The smaller the sagittal sinus, the larger were the other sinuses.

The external architecture of the skull and the age of the subject exert an influence upon the structure of the sagittal sinus. The simple straight type is found in dolichocephalic skulls, whereas the winding, lacunar type of sinus is observed more frequently

in brachycephalic skulls. At senility there is confinement of the small lacunae, and the older the person, the more pronounced are the pachymenian granulations.

The anatomical relations described are of clinical importance. Injuries of the sagittal sinus are not so rare as is generally believed. In 90 Lutz described forty-one cases. The author reports a case of sinus injury in the St. Petersburg Obukhoffs Hospital on the service of Grekov. The patient was a man 63 years old who was operated upon for a severe injury of the skull. The hemorrhage from the injured sagittal sinus was arrested by packing.

In general, such injuries in dolichocephalics and young persons are less dangerous than in brachycephalics and older persons. These relationships come up for consideration also in trephining operations on the skull. SCHAECK (Z).

Dundy W. E. An Operation for the Total Extirpation of Tumors in the Cerebellopontine Angles: A Preliminary Report. *Bull. Johns Hopkins Hosp.* 9, XXXII, 344.

The most common tumor in the cerebellopontine angle is an encapsulated endothelioma arising from the leptomeninges. This is a benign tumor. Its complete removal results in a permanent cure, but the mortality of the operation is high. Therefore partial intracapsular excision is to be preferred. The salient features of the author's method are as follows:

Bilateral boccipital exposure of the cerebellum is effected with as much exposure of the involved angle as possible. The interior of the growth is removed with a curette. The capsule is then picked up with the forceps and, beginning at the upper and lower poles, carefully drawn away from the medulla, pons and midbrain. This traction brings into view the several small veins and arteries crossing from the brain stem to the tumor. The vessels are ligated individually with silver clips or fine silk ligatures and divided. Gradually the whole tumor is delivered from its bed without trauma to the brain stem. The cranial nerves stretched by the neoplasm are liberated as the capsule falls away from them. H. A. McKENNA, M.D.

Russoboff J I Occipital Fracture of the Skull Case -
 Ann J M 9 2, 191, 269

The author reports a cephalocele as large as a man's fist in a child six weeks old. The swelling occupied the entire back between the neck and the scapular region and compelled the child to hold its head to the left side. The tumor was thin and translucent and seemed most ready to burst. An impulse was noted when the child cried. X-ray examination showed a split in the posterior processes of the atlas.

At operation under ether anesthesia the sac was entirely circumscribed, sufficient skin being left to close the opening. The sac was then dissected to rather wide pedicle opened and found to contain the left lobe of the cerebellum. The cerebellum was turned to the cranial cavity, the dural wound closed and the bone defect repaired by reflecting the parietal flaps and suturing one over the other. The calvaria. The skin wound was closed with fine silk. The postoperative recovery was uneventful.

Fourteen and one-half months later the child seemed normal except for its neck (probably due to involvement of the cervical nerves) which it sits up and poor development.

WALTER C. D. REEF, M.D.

Adson, A. W. Preservation of the Motor Root of the Glossopharyngeal Ganglion During the Division of the Sensory Root for Trifacial Neurectomy. Surg Gynec & Obst 9, 1914, 35

The author describes the technique of preserving the motor root while dividing the sensory root of the glossopharyngeal ganglion. Such done the M. Ch. in case comes in. See case M. Ch. 9. The disadvantages of radical operation with hemorrhage, ocular palsy, high mortality, traumatic keratitis and occasional facial paralysis have been largely overcome by refinement of technique and the use of special instrument. Numbness of the face and the margin of the tongue is still distressing but high cannot be overcome but the patient has his head on or a recurrence of true trifacial neuralgia is reduced except the numbness in each ear for the throbbing pain incident to the disease.

When the motor root is so reduced paralyses of the pterygoid masseter and temporal muscles distorts the function of the jaw. When the mouth is opened prevent good coaptation of the teeth on the side operated upon and causes trophic of the muscles and depressions below and below the eye goes. With the technique described it is possible to preserve the motor root without the use of the faradic current thereby preventing motor paralysis but in every old person who has had their teeth removed and do not intend to use a plate there is no object in preserving it.

It is possible to dissect the sensory root from the motor root and divide it without injury to the motor root in approximately the time required to divide the sensory and motor root of the trigeminal

ganglion. The motor root as it enters the middle fossa over the petrous portion of the temporal bone through the foramen spinosum, is found underneath the sensory root on the mesial side. It continues in that relation under the root fibers until it approaches the ganglionic body where it makes a fairly abrupt turn and passes obliquely downward and out and underneath the ganglionic ganglion through separate sheath of the third branch into which it divides.

The ganglion is exposed through an oblique incision of the skin temporal fossa, and temporal bone made one cm in front of the ear and extending upward and backward from the zygoma for 7 cm. A triangular opening about 3 cm in diameter is made in the skull the dura elevated, the middle meningeal artery ligated the third branch of the nerve is identified, and the dissection carried upward and backward the dura being elevated from the arachnoid which is attached to the ganglionic root. Division can be seen by the ganglion. The root and covering the posterior root fibers is then opened with a sharp right angled knife all sensory root fibers and the outer part of the ganglionic ganglion being well exposed. After bleeding has been controlled the motor root holds the internal retractor gently elevating the temporal lobe holding the dura taut, and exposing the posterior margin of the ganglionic ganglion along with the sensory root.

The small dissecting hook is then placed over the sensory root fibers on the mesial side as they enter the ganglion and these fibers are retracted gently in downward and forward direction the posterior sensory root fibers and the posterior margin of the ganglionic ganglion on the mesial side being slightly elevated. With another hook the mesial side of the sensory root is caught and elevated by traction downward and outward sufficient to expose the motor root lying as a separate fascicle underneath and independent of the sensory root preventing downward course toward the third branch. This is preferable to following the sensory root fibers upward and inward to the mesial side of the ganglionic ganglion. After the motor root is brought into view the sensory root is held from the motor root by hook and the sensory fibers are divided with knife.

Profant H J Chronic Suppurative Parotitis with Acute Exacerbations. California State J M 9, 1914, 301

With report of a case in which there are acute attacks of suppurative parotitis. This year the author gives brief review of the essentials of the anatomy and physiology of the parotid gland and discusses the etiology and treatment of suppurative parotitis. On the basis of his own case and those reported in the literature he draws the following conclusions:

Chronic suppurative parotitis is a rare condition

2. An acute attack is favored by inactivity of the gland
3. Susceptibility of the gland to infection is favored by stasis
4. The existing cause is an acute infection occurring in the chronic condition
5. The prophylactic treatment is maintenance of active secretion
6. The curative treatment consists in the alternate local application of heat and cold
7. Whenever the general symptoms warrant drainage should be established by free incisions

E. C. ROWLAND, M.D.

Edberg, E. Congenital Labiopalatine Malformations. *Acta Otolaryng Scand* 9: 17

Lip and palate defects occurring alone or with other congenital malformations may be inherited. In Edberg's opinion it is the duty of physicians to enlighten the laity as to the manifest familial propagation of certain malformations.

In 54 labial and eighty-four palatine operations the mortality was 6 per cent. The danger of aspiration pneumonia from narcotics is emphasized and early operation on the lip without anesthesia is recommended to overcome this as well as the mummification due to the infant's inability to nurse satisfactorily. The palate should be left alone until the child is 3 or 4 years of age. The mortality of early palatine operations is high—per cent. The author has performed eighty-four palatine closures in children ranging in age from 1 to 8 years. There were deaths from pneumonia.

In operations upon the lip flaps from the nasal septum and the lateral aspect of the jaw are utilized to close the nasal opening. As part of the post-operative treatment the lips are exposed to direct sunlight for a period each day.

In closing the palate the methods of Lane, Moscovici and Langenbeck are used. All operations are done in two stages. Since 1905 the author has operated upon twenty-seven cases with the Lane-Moscovici method. In nineteen healing occurred by first intention; in three, fistula formed; in one there was partial rupture, and in one total rupture. There was one death in this series.

The influence of palatotomy operations on speech is discouraging, but the afflux of air to the nasopharyngeal cavity becomes normal and the entrance of food into the nasopharynx is prevented.

Edberg's investigations have brought to light the fact that labiopalatine malformations occur considerably more often in males (57 per cent) than in females (41 per cent). In 3 per cent of the cases the condition was inherited from one of the parents; in 37 per cent it was present also in brother or sister; in 5 per cent it was combined with other disabilities or defects. The incidence of the various malformations was as follows: simple labial defect, 5 per cent; simple palatine defect, 5 per cent; combination of the two defects, 50 per cent.

A. B. MEXNER, M.D.

Ochsner, A. J.: The Treatment of Cancer of the Jaw. *Ann Surg* 92: 1001, 1930.

Ochsner's experience has convinced him that early and very extensive operation with the cautery followed by carefully planned after-treatment with the X-ray or radium is quite worth while in cases of cancer of the jaw. As occasionally even advanced cases will be permanently cured by this method.

MORRIS H. KARY, M.D.

NECK

Tinker, M. B.: The End Results of Treatment in Certain Forms of Malignancy of the Neck. *Ann Surg* 92: 1001, 1935.

In response to a circular letter to all members of the American Surgical Association concerning results in the management of various forms of malignancy of the neck, the author received data from thirty-eight surgeons.

From the standpoint of treatment Tinker divides the cases into three groups: (1) those in which operation is contra-indicated such as cases of metastases to the neck from thyroid or parathyroid growths or growths of unknown origin (the roentgen ray or radium should be used for these); (2) those in which operation offers a reasonable prospect of cure such as cases of early malignancy originating in branchial cleft remnants, carotid gland tumors, parotid tumors, and early cases of Hodgkin's disease; and (3) those in which operation offers little but the roentgen ray and radium have caused improvement and occasionally a cure, viz. advanced cases of Hodgkin's disease, thyroid malignancy, and branchial cleft carcinoma.

Permanent results depend upon complete extirpation of all diseased tissue and all neighboring lymphatic glands, block dissection, sharp dissection as opposed to blunt dissection and the use of the actual cautery instead of the knife for the excision of certain growths. A dry field is obtained by control of the main arterial blood supply early in the operation, either by temporary closure with a Crile clamp or Halsted and Blakes flexible metallic band or by vessel suture. A greater portion of a large vessel can be saved and therefore more collateral circulation can be preserved by vessel suture. The author has sutured the carotid artery three times—once for carotid gland tumor and once for branchial cleft malignancy. The patients survived five years or longer. All general anesthetics increase blood pressure and the venous outflow. The majority of surgeons prefer ether. The author favors local anesthesia with or without general anesthesia.

In 83 cases of Hodgkin's disease five-year cures as obtained in seventeen. Some surgeons have abandoned surgical treatment of this condition. The roentgen ray has caused striking improvement in many cases which appeared to be hopeless.

In 126 cases of carotid gland tumors there were five-year cures and one operative death. The

author regards as old gland tumors malignant. Radical removal of the growth with permanent closure of the arteries gives a good prospect of permanent cure. *Dissection from the vessels frequently followed by recurrence.*

In sixty-three cases of thyroid gland malignancy there were fifteen five-year cures and one operative death. The Mayo Clinic has had 207 cases but has not reported the final result. The length of time the disease has remained unrecognized or even unsuspected is often surprising. Operation performed before the tumor has reached beyond the capsule should give permanent cure. In ten cases with stenosis malignancy of long standing and with infiltration of the great vessels the only thorough removal of the growth followed by radium treatment has given a cure lasting for seven years in one case and for eight years in another.

In fifteen cases of bronchial cleft malignancy there were three five-year cures and two operative deaths. The results depend largely upon the duration and the extent of the growth. Early operation gives reasonable prospect of cure and certainty of the survival.

Generally hopeless cases can be cured by the application of radium.

In 70 cases of parotid gland malignancy there are twenty-five-year cures. If the growth is within the capsule there is a chance for permanent cure and if the capsule is carefully followed during excision the facial nerve may be saved. The

author has operated upon eight cases without injury to the facial nerve and with permanent cure. After the capsule has been broken the growth extends rapidly and the prospect of permanent cure becomes less. The author draws the following conclusion:

The end result in certain cases usually considered markedly malignant is perhaps not so good as is generally supposed.

A number of reliable observers have seen permanent improvement follow the use of the roentgen rays and radium.

Certain forms of malignancy of the neck considered hopeless by some surgeons have been operated upon with apparent permanent cure by others.

WALTER C. BARKER, M.D.

SURGERY OF THE CHEST

CHEST WALL AND BREAST

Dunham, E. K. Infection in the Mediastinum in 17 Intrathoracic Cases of Empyema. *Surg. Gynec. & Obst.* 9, xxv, 353.

Fulminating cases of empyema are frequently associated with pericarditis or peritonitis. These conditions have often occurred to nearly simultaneous as to suggest that the streptococcus has special predilection for serous membranes. Statistics based on about 4,000 cases of non-traumatic empyema tend to show, however, that this assumption is not correct, the involvement of the pericardium, the peritoneum, and the pleura being due to direct extension of the infection through the intercostal spaces.

Since extension from the peribronchial tissue spaces may also occur toward the pleura and cause empyema, it is not unreasonable to suppose that it can travel in the opposite direction and thus involve the hilum and the mediastinum. In the histories of 1,850 cases of empyema there was no record showing the recognition of cut mediastinal infection during life, but this condition was noted at autopsy in sixty-seven (3.6 per cent) of the 55 necropsies performed within four weeks after the empyema was recognized.

The author discusses the history and autopsy reports in detail and cites several which support his conclusions.

Sections of the tissues clearly demonstrated the presence of the infecting organisms in the interstitial spaces. In one case with distinct pleural involvement the cultures from the heart blood were negative, a fact indicating that the presence of the

infection in the mediastinal tissues is not due to bacteremia.

Attention directed to the fulminating character of the cases in which an infection of the mediastinal tissues is observed most frequently. The incidence of mediastinitis declines rapidly in the convalescent period. *RALPH B. BRITTON, M.D.*

Sorge, A Contribution to Our Knowledge of Mediastinal Tumors (Beitrag zu Kenntnis der Mediastinaltumoren). *Arch. f. klin. Chir.* 9, 33, 5.

The author reports case of very large mediastinal tumor in a former 33 years of age and discusses the clinical aspect and pathologic anatomy of the condition.

An early diagnosis is rarely made. Most cases come to the clinic with the most pronounced symptoms of compression in the mediastinum. The variations in the condition are always striking, the most serious dyspnea given without complete euphoria following slight therapeutic measures.

In the case reported, salivarian therapy had transient good effect although the Wassermann test was negative. This fact the author attributes to the venous necrosis which as food for autopsy. He therefore recommends the trial of salivarian therapy in all such cases. Other treatment is purely symptomatic. The only surgical treatment usually possible when the tumor is situated in the inferior mediastinum is decompression by Sauerbruch longitudinal mediastinotomy. When the tumor is in the posterior mediastinum an Enderlen right angled flap reaching to the border of the scapula and with its base from the

third to the ninth thoracic vertebra, should be formed to obtain an extrapleural exposure.

The tumor in the author's case was probably a lymphosarcoma originating in the remains of the thymus. SIEVERS (Z)

Hoernacke, E. A Teratoma of the Anterior Mediastinum (Ein Teratom des vorderen Mediastinums). *Zisch. f. Path.* 9. xiv. 37

Among teratomata of the anterior mediastinum those of cystic type are more common than the solid teratomata. All consist of fibrous substance and formations resembling skin. I. those of complicated structure the tissue of all organs may appear; sometimes there are also tissues which have undergone malignant degeneration. Such tumors are most common between the twentieth and thirtieth years of age. The clinical symptoms correspond in general to their size. The mortality is very high because of the encroachment of the growth on the respiratory and circulatory tracts. Metastases are rare even in cases of the malignant forms. Seven of the sixty-four known cases are cited and one treated by the author is reported in detail.

Hoernacke's patient was a man 5 years of age. In the anterior mediastinum was found a cyst the size of a child's fist, with two cavities. Both cavities contained polyp masses, and in the larger hair and polypous proliferations from the wall were present in addition. In a thickened portion of the wall were a few more small cysts. The ground substance of the wall was connective tissue and contained smooth muscle fibers, particularly endothelial formations, and transversely striated muscle fibers. The cavities were lined with epithelium of the character of epidermis or mucous membrane epithelium. A few small cysts contained columnar epithelium. On the areas with polypous development the epithelial covering showed sebaceous glands, sweat glands and undifferentiated glands. The tissue small pieces of cartilage, and mass of undifferentiated tissue were also found. KORRO (Z)

Lawitt, P. H. Tuberculosis of the Breast, with the Report of Two Cases. *Boston M. & S. J.* 923. dxviii, 30.

The author gives a brief review of the literature. On the basis of postmortem examinations it is assumed that cases of tuberculosis of the breast show evidence of tuberculosis also in the lungs or the abdomen. The infection enters the breast through the blood or lymph streams, by direct extension, or through cracked nipple. The general appearance of the discrete and confluent types is described. A discussion of the differential diagnosis and treatment is followed by a report of the author's two cases. The article is summarized as follows:

1. Tuberculosis of the breast is one of the rarest forms of tuberculosis.

2. The source of the infection is variable.

3. A differential diagnosis between carcinoma and tuberculosis is often difficult.

4. Operation gives excellent results. The choice of operation must be based on the type of the infection. E. C. ROBERTS, M.D.

Bunts, F. E. The End Results of Operations for Cancer of the Breast. *Ann. Surg.* 9. lxxvi, 24.

For successful results the treatment of cancer of the breast like that of any other pathologic condition must be strictly individualized.

The results depend more upon the stage and dissemination of the growth when it is presented for treatment than upon the particular type of operation performed.

More data regarding the pre-operative and post-operative use of the X-ray and radium are required before final conclusions can be drawn, but there seems to be little doubt of the value of radium applied directly in the axilla.

The substitution of the X-ray or radium for surgical treatment cannot be safely considered at the present time.

The early removal of the growth remains the one and only true method of treatment.

H. W. MCKENNAULT

TRACHEA AND LUNGS

Marshall, H. Tracheal Resection and Tracheoplasty with Special Consideration of Transverse Resection (Ueber Tracheiresektion und Tracheoplastik mit besonderer Berücksichtigung der Querresektion). *Monatsschr. f. Ohren.* 9. 1. 776.

Although dilatation is the method of choice in the treatment of congenital stenoses, operation may be rendered necessary by such conditions as ulcers due to pressure difficulty in the introduction of bougies, etc. In cases of stenosis due to softening the delicate hyaline cartilage of the tracheal passages is easily destroyed by pressure from without (trauma) or by perichondritis. A condition designated as tracheomalacia then develops which robs the trachea of its firmness. When this occurs the tension and the respiratory action of the tracheal wall cannot be relieved after the removal of the pressure and the only treatment possible is tracheal resection. Partial resection with covering of the resulting defect by plastic operation is best. The prognosis of total or transverse resection is less favorable. As the lung and in fact all of the thoracic viscera, are hung on the trachea as it were, great debasement develops following the transverse resection, and this can be prevented by suture only with difficulty. The author's method of suturing is as follows:

A circular and if possible, submucous suture is inserted. This may be done posteriorly by turning the tracheal stumps; it may be possible also to suture the posterior circumference with catgut from within the knots being placed in the lumen.

aspirate the air with the stagnating blood, determines whether air embolism will become evident.

The clinical pictures in cases of air embolism show a wide variety. Further study of these complications should be made by means of examinations of the eye, feces, and urine.

The best treatment is preventive. When an air embolus occurs the operation should be stopped immediately the patient's head lowered, and the heart action stimulated. Intravenous injections of adrenalin will increase the amount of blood passing through the brain by decreasing the blood supply in the splanchnic areas. H. A. McKim, M.D.

HEART AND VASCULAR SYSTEM

Von Albertini, A. Pulling-Rupture of the Heart and Its Mechanism (*Die Zerrungsruptur des Herzens und ihr Mechanismus*). *Frankfurt Zeitschrift* 92 xxiv, 185.

A girl threw herself from the third story of a house and died three days later. Death was attributed to fracture of the pelvis with injury to the intestine. Autopsy showed a transverse tear of the endocardium at the base of the right anterior pulmonary artery and hemorrhages in the epicardium and endocardium at the base of the right auricle. Microscopic examination showed an oblique tear in the lower segment of the pulmonary tube extending to the cardiac muscle fibers.

There are three varieties of rupture of the heart: those due to bursting, those due to crushing, and those due to pulling. The bursting ruptures are caused by an increase in the internal pressure, traumatic or spontaneous. The tear occurs at the site of the greatest tension of the wall, the highest pressure, and the greatest elasticity. Crushing ruptures are caused by the action of secondary external force against the region of the heart. The case reported by the author was pulling rupture due to the heart continuing to fall when the body struck the ground. The rupture site is characteristic for ruptures of this type. The heart is forced out of its normal position and tear takes place at the point where the pull is greatest. Kloss (Z).

Allen, D. S. and Graham, E. A. Intracardiac Surgery—A New Method. Preliminary Report. *J. Am. Med. Ass.* 927, lxxx, 28.

The new surgical procedure for intracardiac operations which the authors have worked out is performed in the following manner:

A cardioscope is introduced into the cavities of the heart through the heart wall and tied into the wall by pursestring suture or ligature thrown around the point of introduction. This also controls the hemorrhage. It is then manipulated to bring into view the desired portion of the interior of the atrium or the ventricle. The blood does not obscure the view. The endocardium can be seen through the cardioscope as clearly as the mucosa of the bladder is seen through the cystoscope.

The cardioscope is a metal tube with one end closed by a planoconvex lens. The convex surface of the lens is outside and can be applied snugly to the walls of the heart cavity.

A knife to cut the alae is carried alongside the tube of the cardioscope. The flat steel handle is held close to the tube by two collars. The blade of the knife is placed at right angles to the handle. The cutting edge faces the lens. The entire blade can be concealed in a groove cut across the center of the lens.

Because of hemorrhage the ventricular route of entry to the mitral valves was chosen at first, an opening just sufficient to admit the cardioscope being made through the wall of the left ventricle near the pericardium and pursestring placed about the instrument. Because of high pressure and cardiac disturbances, however, this method was abandoned and the left auricular appendage chosen as the route of approach.

The end of the cardioscope is pushed from the cavity of the left auricle into the cavity of the left atrium, the instrument being held so that the valve leaflets are in contact with the lens during systole. The knife blade is pushed into the cavity of the ventricle. By traction on the handle of the knife the leaflet is then brought against the lens, and by further traction the valve is cut.

The end of the cardioscope is then withdrawn from the cavity of the atrium into the cavity of the appendage. While it is being held there that portion of the auricular appendage which contains the end of the cardioscope is tied off and amputated.

Twenty-four experiments have been done through this approach. There was only one fatality and this was due to a very easily avoidable fault of technique.

The advantages of the procedure are that hemorrhage is prevented, the circulation is not interrupted, haste is not imperative and the operation can be carried out under the guidance of the eye.

H. A. McKim, M.D.

PHARYNX AND OESOPHAGUS

Beck, O. The Etiology of Retropharyngeal Abscesses (*Zur Ätiologie der Retropharyngealabszesse*). *Monatsschrift für Ohrenheilkunde* 91, 1906.

The rupture of pus through the tip of the inflamed mastoid process into the soft parts of the neck causing a condition known as Bezold's mastoiditis is not uncommon. Cases in which the pus penetrates to other sites are less frequent.

The author describes two cases of the latter type. In one, the rupture occurred in the floor of the tympanic cavity and in the other in the median wall of the mastoid process. In both, the gravitation of the pus led not only to an abscess visible externally but also to a retropharyngeal abscess. Beck states that retropharyngeal abscesses originating in the ear always lie in front of the deep fascia of the neck.

PARKER (Z).

Lothman, G. Plastic Repair of the Esophagus. Particularly from the stomach (A. or plast. when I am der. peritoneal imbedder. A. der. M. A. L. G. v. cr. m. m.)

After short review of the history of plastic repair of the esophagus, partly later from the stomach, I discuss in the first part of the paper the Lothman report first as the Beck-Jarvis method in four cases of fracture of the pharynx due to trauma caused by the food of the patient died from bronchopneumonia. In other five rupture of the injured lower esophageal sphincter with symptoms of ulceration in the cervical column.

The principle of the operation which carried out whether it was on the formation of a fistula from the greater curvature of the stomach which is placed in front of the ruptured wall. To see that there is no necrosis of the tissue directly at the esophageal which brought forward in the three cases because of the site at which the gastric vessels are cut and it is much easier to introduce a skin canal between the cervical pleural tube and the stomach and the end of the esophagus.

A fifth case is reported in which the patient for the esophageal taken from the transverse colon. The patient died from pneumonia. In the other cases in which the patient followed the proposal of Blaud, the patient was operated on from cardiac cancer but with other results. In an eighth case the patient performed the antebuccal operation in a third case. The method. This patient died from mediastinal cancer.

Lothman reviews critically the various methods of esophageal surgery, comparing the results of different surgeons. He concludes that the best results are obtained in the operation of the stomach. He gives the total number of which and the results of plastic surgery in various cases. (J. G. v. cr. m. m.)

Lilienthal, H. Carcinoma of the Thoracic Esophagus. (Ann. Surg. 1914, 58, 331.)

Lilienthal reports the results of his study of 100 cases of carcinoma of the thoracic esophagus. He divides the cases into two groups: those operated on before the patient was admitted to the hospital and those operated on after admission to the hospital.

Aggravated symptoms of carcinoma can be relieved by the operation of the stomach. The results of the operation are discussed in detail.

The general results of the operation are discussed in detail. The author concludes that the operation of the stomach is the best method of relieving the symptoms of carcinoma of the thoracic esophagus.

the finger. A small polypoid mass was removed from the mucocutaneous border and was subjected through the opening of the stomach. It was hardened and slightly milkwhite of color and was found through examination of all the sections of the stomach. Applied just above the upper at 10 hours for 10 hours. The week later there was some pain with internal pain. A further three hours of treatment of radium was then given. The wall of the stomach reacted with aphonia due to pressure of the left cord which remained permanent. A new area of the mucous membrane, which was treated with light application of the electrolysis through the wound in the back. Regular food was given through the end of the back. Four days later the patient developed dropsy and was struggling on attempt to get a swallow. An attempt could be passed through an aperture in the stomach. The patient died from pneumonia seven and four months after the first operation.

The postmortem examination revealed a large neurotic fistula between the trachea and the esophagus about 1 cm above the upper mucocutaneous border. A mass of glandular tissue (4 x 3 x 1 cm) esophagus and another between the esophagus and the aorta, 1 cm long and 1 cm high. The skin transverse appeared normal. The lymphatic system of the stomach was not much and free from a little a tubercular focus.

The author concludes that the operation of the stomach is a successful method of relieving the symptoms of carcinoma of the thoracic esophagus. The results of the operation are discussed in detail.

W. C. BAKER, M.D.

Heddlum, C. A. Combined Transpleural and Transperitoneal Resection of the Thoracic Esophagus and the Cauda for Carcinoma. (Surg. Gynec. & Obst. 1914, 19, 17-19.)

Heddlum resected the thoracic esophagus and the cauda for carcinoma. The operation was performed by a combined transpleural and transperitoneal approach. The results of the operation are discussed in detail.

The patient was a man 53 years of age, with a history of carcinoma of the thoracic esophagus. The operation was performed by a combined transpleural and transperitoneal approach. The results of the operation are discussed in detail.

A preliminary rib resection was performed to facilitate exposure and the collapse the lateral chest wall so that an esophageal stoma could be made. At the time of the radical operation the growth was localized in the cardia but extended through the hiatus. There were no markedly enlarged glands. The incision was extended upward and the pleural cavity opened widely. The diaphragm was then split medially at the hiatus and the cardiac end of the stomach and the esophagus were mobilized up to the root of the left lung. The right agus trunk was separated the left one cut. During these steps of the operation there was no appreciable change in the pulse or respiration. About 4 cm. of the lower esophagus and most of the stomach at the lesser curvature and its upper third at the greater curvature were resected. The cut end of the esophagus was sutured to the depressed skin edges laterally and the sutured stump of the stomach sutured to the skin margins in the midline. The diaphragm was sutured with chromic catgut and both pleural and peritoneal cavities were closed without drainage.

Immediately after the completion of the operation the patient was fully conscious and rational. Most

of the operation was performed under local anesthesia. The pulse was 90 and of fair quality. The blood pressure did not fall below 110 systolic and 102 diastolic. The convalescence was relatively uneventful.

On the fifth day feeding was begun through the gastric stoma, and on the fourteenth day a rubber tube connection between the stomas was made through which the patient swallowed liquids. On the twentieth day he swallowed liquids containing 1,800 calories. Later he was able to swallow cereals, milk toast, and similar foods. He gained weight and his hemoglobin rose from 35 to 65 per cent.

The pathologic specimen showed an annular carcinoma of the stomach which had infiltrated beneath the mucosa, producing masses measuring in the fixed specimen 9 by 7 by 1 cm. In areas the growth extended through the serosa. It involved the lower esophagus. A number of lymph nodes showed metastases. There was a margin of normal tissue above and below the growth.

This is the second reported case of successful combined resection of the cardia and the thoracic esophagus; the first was reported by Zaaier in 1913.

SURGERY OF THE ABDOMEN

ABDOMINAL WALL AND PERITONEUM

Cullen, T. B. Further Notes on Diseases of the Umbilicus. *Surg. Gynec. & Obst.* 9, xxxv, 57.

The author reports his observations on diseases of the umbilicus which he has made during the six years since the publication of his book on this subject.

He quotes Logan's and Miles' descriptions of the frequency of tetanus in the newborn among the Chinese, which is due to the lack of asepsis during labor and especially of care of the cord and umbilicus.

Granulation tissue at the umbilicus in the newborn appears as a small, red, pus-discharging mass in the umbilical depression. Histologically the surface is composed of epithelium and covered with polymorphonuclear leucocytes. The outer layers are granulation tissue but the center may be more or less organized. In the treatment the base may be ligated with catgut and the top clipped away. Granulation tissue usually dries up under treatment with strychnine.

Umbilical polyps originating in the omphaloenteric duct resemble cherry secret relatively clear fluid, and are covered with intestinal mucosa. The author reported a case of umbilical polyp associated with Meckel's diverticulum. The polyp was excised and the stump of the diverticulum invaginated into the gut under purse-string suture. This invaginated stump became congested and partially obstructed the gut lumen.

Gortsch in 1909 reported a case with gastric mucosa in the tip of a Meckel's diverticulum.

Cases of an accessory pancreas in the tip of Meckel's diverticulum have also been reported.

The author describes a case of Meckel's diverticulum containing an ordinary polyp with its head buried in the wall of the diverticulum near the tip, the point of the polyp lying free in the lumen. He mentions also two cases of malignant myosarcoma associated with Meckel's diverticulum.

Umbilical infection is frequently caused by an accumulation of foreign material in the umbilical depression. The treatment consists in dilating the umbilicus, curetting away the concretion, removing any granulation tissue, and treating the umbilical area in the same manner as superficial infection.

The author describes a case of tuberculous peritonitis with tuberculous masses opening at the umbilicus.

Fiocchi has described a chancre of the umbilicus in which spirochetes were obtained. Ryuma has reported a case of condyloma of the umbilicus which disappeared after antisyphilitic treatment.

In 1909 the author reported bluish discoloration at the umbilicus as a diagnostic sign of ruptured extra-uterine pregnancy. This would be expected only when there is free blood in the abdomen and probably is more apt to be encountered in thin persons. Occasionally the bleeding may be slow and persistent instead of sudden and severe. A large quantity of blood may accumulate in the abdomen without causing signs of shock. In such a case the umbilicus imbibes the blood and appears bluish.

Cullen has collected nine cases of atheromatous cysts of the umbilicus. These cysts, which may reach 3 or more centimeters in diameter, are usually

pedunculated covered with skin stained, and thus dried. They have smooth inner surfaces, are filled with grumous or crumbly material, and are lined with squamous epithelium devoid of hairs and sebaceous or sweat glands. The cyst contents consist of exfoliated squamous epithelium fat droplets, and cholesterol crystals. The cysts are easily removed. In the author's opinion small pieces of attenuated skin of the umbilical sac may become injured and in time produce an inflammatory cyst.

Adecomonomat of the umbilicus occur only in women. These growths are small, but occasionally

It at the menstrual period and sometimes associated with slight escape of blood. The period histologically they consist of unstriped muscle and fibrous tissue with tenue mucosa scattered throughout the nodules.

The author has found one instance of a small nerve or neuromatoma of the umbilicus and on one or two occasions has noted small pigmented moles.

Mention is made also of Carson's case of papuloma of the umbilicus arising from squamous epithelium. The papillary masses are covered by many layers of squamous epithelium in the superficial layers of which are hornified. Scattered between the epithelial cells are small round cells or polymorphous nuclear leucocytes and many eosinophils. Beneath the epithelium are young connective tissue cells, small round cells, and polymorphonuclear leucocytes. The central stems of the papillary masses consisted of fibrous tissue.

A case of large pseudomucousoma of the umbilicus several small pseudomucousomas of the umbilicus is reported.

Carcinoma of the umbilicus is classified (1) primary umbilical carcinoma of the squamous cell type or adenocarcinoma (2) secondary umbilical carcinoma from the stomach gall bladder intestine ovaries uterus, and abdominal organs. Primary squamous cell carcinoma of the umbilicus is rare. The author has collected only four cases. Carcinoma of the umbilicus is usually secondary to primary cancer of the stomach. Umbilical carcinoma secondary to carcinoma of the intestines and rectum is rare.

Sarcoma of the umbilicus is rare. The author describes one of perithelial liposarcoma.

An omphalic umbilicus is characterized by hernia of surrounding skin the defect being repaired by amputation which is reflected upon the abdomen from the cord. The surrounding skin in all cases is usually intact.

Umbilical hernia at birth is probably due to one of three causes or some combination of them: (1) stretching of an omphalic umbilicus (2) the escape of abdominal contents through patent umbilicus (3) failure of the intestines to recede into the abdomen. Prompt operative interference is the only treatment. Delay of a few hours may be fatal. Even after short time the omentum may become dry and the intestines may be cyanotic.

In dissecting testicular loops densely adherent to the walls of an umbilical hernia patches of the sac wall may be left on the intestines. These patches should be trimmed off like the repair patches on the inner tube of a bicycle tire. Their surfaces are relatively smooth and do not bleed.

The author describes the causes of persistence of the stricture. WALTER C. STREET, M.D.

GASTRO-INTESTINAL TRACT

Judd, E. S., and Lyons, J. H. Resection of the Body of the Stomach for Ulcers. Report of a Series of Cases with End Results. *Ann. Surg.* 9, April, 1900.

The improbability of distinguishing between benign ulcer and carcinoma of the stomach almost microscopic examination makes some form of resection of the ulcer necessary. If the ulcer is large or high on the body of the stomach, if there are multiple ulcers or if there is hour glass constriction, resection is customary. It is often the most simple operative procedure. This operation, also called transverse sleeve or middle gastric resection, is particularly adapted to ulcer with hour glass deformity as it removes the lesion and, at the same time, relieves the obstruction.

Attention has been called to the fact that stomach in which sleeve resection has been performed empties better than one in which V shaped excision has been done. For functional reasons Alcock recommends the removal of sleeve which is longer on the greater curvature than on the lesser.

Observations made at the Mayo Clinic on 6 patients who had test meals before and after operation indicate that after sleeve resection the reduction in acidity is considerable. De Quervain and Lufbauer and Redwitz report similar decrease. Sufficiently numerous observations have not yet been made to determine whether the removal of acid secreting mucous membrane is fully or only partially responsible for this decrease.

Opinion seems to be divided as to the advisability of using sleeve resection. Chief among the adverse reasons offered is the probability of hour glass constriction as sequela. Judd and Lyons believe that this possibility has been over-emphasized. Several authors consider sleeve resection the operation of choice and it is reported high percentage (70-90) of complete or very nearly complete cure.

RESECTION	STAGED	RESECTION	PERIOD	FOOTNOTES

From 1901 to 1902 thirty sleeve resections were performed in the Mayo Clinic. One for angiodysplasia for lympho-vascular thrombosis for carcinoma, and fifty six for benign gastric ulcer. The operations for ulcer were performed on thirty seven women and nineteen men.

Five of the thirty two patients with carcinoma it was necessary to resect the colon at the time of the

sleeve resection in one gastro-enterostomy as necessary and in one pyloroplasty. In this group there were four operative deaths. Thirty-seven per cent of the patients who survived the operation and who have been traced are alive and well at least two and one-half years later. Ten patients died of recurrence after leaving the Clinic. None of the patients in whom glandular involvement was found at operation is alive.

As a group the fifty are cases in which resections in continuity were performed because of benign ulcer represent serious surgical problems. In this group there were three operative deaths, and one patient died after leaving the Clinic. Four of the fifty-six patients were operated on less than one year ago. Of the remaining forty-eight, 85 per cent have reported their condition, and of these 70 per cent are cured. The average length of time between the operation and the last report is four years. Six patients reported that they are improved but not cured, and six considered the results unsatisfactory.

In fifteen cases a roentgen ray examination was made at periods varying from one month to six years after the operation. The stomach was then found to be practically normal in shape, size, and position.

In considering mortality rates, the possibility of gastric cancer in patients believed to have gastric ulcer should be borne in mind.

INDICATIONS FOR SLEEVE RESECTION

Sleeve resection is not suitable for all cases, but the authors believe it can be employed to advantage more often than formerly. The simple V excision of gastric ulcer may result in almost complete retention. The lesion is more apt to be removed thoroughly by sleeve resection than by excision. Moreover, in cases of gastric ulcer the lesion in the stomach although apparently benign may be malignant and must be removed or destroyed, and in this case the sleeve resection seems to be the more logical procedure. When the ulcer is large, indurated, and in the central or cardiac third of the stomach, a sleeve resection can be performed with less technical difficulty than excision and gastro-enterostomy; there is less actual operating than in any other procedure and usually the technical steps can be carried out more accurately. In none of the Mayo Clinic cases, as there were none of the gastric ulcer group, was the suture line and even when the anastomosis was complicated, there was no interference with healing.

The principal objections to sleeve resection are that it removes too much of the unaffected gastric wall, and that it is often followed by contraction which results in hour glass deformity. If the tumor is malignant there can be no objection to wide excision of the lesion, but if it is benign, as much good tissue should be preserved as is compatible with good results. For this reason it is best not to employ the procedure for small ulcers. If the ulcer

is large, the deformity will often be less following sleeve resection than following excision and gastro-enterostomy.

TECHNIQUE

The first technical step in the operation consists of separating the lesion from the surrounding structures. After the stomach has been freed, the gastro-hepatic omentum is dissected away from the lesser curvature for a sufficient space and the gastroduodenal omentum separated from the greater curvature. The area to be removed is clamped between two large Pezzer clamps. Rubber guarded clamps are used to prevent soiling from the gastric contents as the segment is cut away with the cautery. These clamps are placed on each segment of stomach just beyond the large crushing clamps. The latter are then removed and the two segments joined. Two rows of catgut sutures are used to approximate the mucous membrane, the muscularis, and the peritoneal layers, and the anastomosis is completed by one row of interrupted silk sutures. The angles at the lesser and greater curvatures are supported by suturing the several parts of the severed omentum over them.

CONCLUSIONS

The authors' conclusions are as follow:

In cases of carcinoma of the stomach the results of sleeve resection are as satisfactory as those of any other form of operation.

Sleeve resection is well suited for certain ulcers high on the body of the stomach for large perforated ulcers, and for multiple ulcers. It is the ideal procedure in hour glass stomachs.

The danger of hour glass constriction following sleeve resection has been exaggerated.

The functional results of this operation are very satisfactory.

Holzwiesing, M. The Formation of Peptic Ulcer in the Jejunum (Ueber peptische Geschwulstbildung im Jejunum). *Zentralbl. f. Chir.* 1922, xlix, 864.

For the development of a peptic ulcer the presence of digestive acid gastric juice is essential. If the latter cannot be demonstrated it is not possible to speak of a peptic ulcer. For this reason the author doubts whether all of the fourteen cases of lesions in the vicinity of the ileocecal valve which were recently collected by Fischer were true cases of peptic ulcer.

In a case reported in this article by Holzwiesing a group of peptic ulcers were found just beneath the pyloric duodenoperitoneal junction, the perforation of one of them had caused a fatal peritonitis. Acid was found in the abdominal cavity. The gastric juice had not been neutralized below the papilla of Vater because the latter was occluded by a stone. The local predisposition of the affected jejunal loop was due to the presence of two mesenteric lymphomata obstructing the circulation.

Rever (Z)

Carmes, A. Foreign Bodies in the Intestine: A Rare Diagnostic Error (F. conlueper in *Intern. Wochenschr. Allg. Chir. u. Gynäk.* 1914) *Spatul* 10 133

A boy 17 years old & allowed pain. One year later he experienced attack of severe pain in the right hypogastrium with nausea, vomiting, distention of bowels. A diagnosis of appendicitis made and ice applied to the abdomen. The condition did not improve, the patient referred to the author.

At operation a small liver enlarged by adhesions was found in the ileocecal region. The appendix, which was retrocecal, was not inflamed. A pin pointed through the posterior wall of the ileum from the ileocecal valve only its head remained in the lumen of the gut. The pin was removed and an appendectomy was done. The patient was discharged at the end of four weeks.

WOLFFENBUTEL (Z)

Huettl T: Primary Sarcoma of the Intestine (Transvers. Intussusception) *Omnidip* 1914, 47

The thoracic sources the pathologic nature and the clinical aspect of primary sarcoma of the intestine in connection with the case histories of 14 sarcomata of the small intestine & 6 of the colon and 4 of the rectum. It now occurs in the lower part of the intestine with equal frequency. The rates of carcinoma & sarcoma is 36:1. Huettl does not consider lymphosarcoma true as carcinoma but lists lymphadenoid sarcoma (Ziegler) in this group be different to leiomyosarcoma and the malignant lymphoblastoma (Rilbert). The true sarcoma he includes in the other groups: the sarcomatous or small melanosarcoma, giant cell sarcoma, and alveolar sarcoma originating in the muscular or connective tissue of the intestinal wall.

In the small intestine and ileocecal region the most common sarcoma is the round cell sarcoma in the colon it is the lymphadenoid sarcoma, while in the rectum it is the melanosarcoma. The four rectal sarcoma in the author's cases belonged to the group of non-melanoid sarcoma. It is very difficult to draw sharp line between round cell sarcoma and lymphadenoid sarcoma. A striking fact in Huettl's cases is that all of the lymphadenoid sarcoma metastasized along the lymph channels. The melanoid sarcoma include both very malignant tumors and benign tumors. It may be assumed that the pigment found in the cells is not of uniform origin.

None of the patient whose cases are reported are between the third and fifth decades of life and the rest in order of years of age. There are 10 males and 4 females.

Sarcoma of the duodenum appears in the form of diffuse infiltration, which forms compact, nodular tumors. Sarcoma of the small intestine usually causes distention of the infiltrated part of the

gut. In Huettl's opinion the distention results from destruction of the muscle element. Lymphadenoid sarcoma, which springs from the submucosa layer and invades the muscular structure of the intestine also causes distention. It may originate from the invasion of the mesentery and growing towards the lumen of the gut cause constriction.

The clinical picture is very diverse. A pre-operative diagnosis is difficult. There is nothing characteristic in the history. The frequent association of the condition with tuberculosis can be explained by the assumption that the lymphoid cells of the follicles of the intestinal wall form the point of origin of the lymphadenoid sarcoma, or cancer may arise from any chronic inflammatory collection of lymphocytes.

The course of the disease may be divided into two periods. During the first stage the complaint is indefinite, but in the second stage the tumor is palpable. The mobility of the tumor, the blood picture, and the fever are not of much value in the diagnosis. Roentgenography is important. The most frequent complication intestinal intussusception. The prognosis is unfavorable.

A better result may be expected only in cases of rectal sarcoma. Of the thoracic four patients three are still alive one half one and half years after the operation. Of the cases of sarcoma of the colon and large intestine only one was cured and in this instance the tumor was an ileocecal giant cell sarcoma. In the others the condition was found to be inoperable at operation or recurred a short time afterwards.

The lymphoid and the infiltrative sarcomata are particularly malignant the process is only hastened by operation. The picture is similar to that usually seen after extirpation of the spleen for leukemia following treatment improves the condition rapidly becomes one for which case Huettl recommends roentgenotherapy combined with administration of arsenic. von Loser (Z)

Warashiki, F. C., and Lampert M. A Penetrating Wound of the Peritoneum with Puncture of the Intestine. *J. Am. M. Ass.* 9 1414 *Sph.*

A boy aged 6 years, slid down the side of his back onto a broken pit fork handle. The handle penetrated the right peritoneal coat in from the rectum for distance of 6 to 7 in. The boy pulled out the handle, lay down for a hour and then walked to the farm house. He refused the severe abdominal pain he was given morphine and codeine.

Upon his arrival in the hospital 1 entry four inches distal, about eight hours after the accident his temperature 104 degrees F. his pulse 144 and his respiration 4. His color was good.

The abdomen was hard and contracted the rectum being spastic. Complaint was made of cramps and pain in the lower abdomen.

On general percutaneous dullness was noted. A catheterized sigmoidoscopy of rectum normal. The

ragged, penetrating, stellate perineal wound did not bleed. Proctoscopic examination showed no injury to the rectum. Immediate exploratory operation as advised.

With the patient under ether anesthesia the abdomen was opened in the midline. Fluid and intestinal contents escaped. Food and fecal material were found widely disseminated. A lacerated wound of the ileum, about 6 in above the cecum, through which intestinal contents were escaping, was closed with two layers of inverting sutures. The intestines were found covered with exudate and were deeply infected. The penetration of the peritoneal cavity was discovered to the right of the pelvic peritoneum; it did not involve the ureter or prostate gland.

After the abdomen had been freely flushed with salt solution, the abdominal wound was closed around two tube drains reaching to the pelvis. Another tube was then inserted through the perineal wound until it came into contact with the abdominal tubes, thus making through and through drainage. The perineal tube was fixed in position with a silk worm gut suture. The operation lasted thirty-five minutes.

The patient was given continuous proctodynia, kept in Fowler's position, and given 500 units of nitrofurin serum. The respirations are kept between ten and twelve by frequent doses of morphine. There is no postoperative nausea or vomiting. Water was given freely by mouth. Frequently changed, moist hot packs were applied to the upper abdomen and both sides. After twenty-four hours the pulse was 116 and the temperature 102.4 degrees F. Both gradually returned to normal. On the fourth day the patient had a normal bowel movement.

For the first thirty-six hours there was considerable serous cloudy drainage from the perineal and abdominal tubes. This gradually subsided and the tubes were removed on the fifth and sixth days. The patient made an uneventful recovery and was discharged in good condition on the sixteenth day.

In the authors' opinion pain is one of the first and most important signs of injury of the abdominal contents, and when there is doubt as to the presence of an intra-abdominal injury exploratory operation is advisable. Early operation will reduce the mortality. Through and through drainage is effective. It is more readily possible in the female. Intestinal content soiling the uterus is best removed by free saline flushing and vacuum aspiration.

The authors give sufficient morphine for three or four days to reduce the respirations to 12 or 14. Water should be given freely by mouth and proctodynia supplemented by intra-ovine and subcutaneous injections of saline solution. Nausea and vomiting should be treated by frequent gastric lavage. Early blood transfusion is of value.

WALTER C. BRYANT, M.D.

Poleson, A. Ptole of the Proximal Portion of the Colon from the Clinico-Surgical Standpoint (*Ptole des proximalen Dickdarmabschnittes in klinisch-chirurgischer Hinsicht*). *Verh. Chir. Arch.* 93, 4, 57.

A predisposition of the proximal portion of the colon to congenital variations is due to the late conclusion of its embryonic development. The more common secondary changes of form and position are caused by inflammatory processes. No definite conclusions have been reached regarding the nature of Jackson's membranes and the pathological and anatomical relationships. Such changes, or those originating in another manner, lead to a closed circle, as inflammatory processes may be both the cause as well as the result of mechanical disturbances.

Ptole of the colon occurs more frequently in females than in males; the latter include particularly those who are obliged to stand, good deal are emaciated, and subsist on bulky food. In the first stage of the condition there is stasis of the intestinal contents, particularly in the cecum; the symptoms consisting of constipation, periodical flatulence and slight pain in the right iliac region. Only in the second stage, when ataxia and dilatation of the cecum are superimposed on the stasis, does the subject feel really sick. The constipation and pain then become more intense, force the patient to remain in bed for two or three days and are sometimes associated with nausea and vomiting.

In the third stage the right half of the transverse colon sinks, the hepatic flexure becomes angulated, and the transverse colon may course partly parallel to the ascending colon. A later the left half also sinks and must then rise abruptly to the splenic flexure which remains fixed, and as the omentum which is drawn to the right exert pressure, stasis becomes complete in the entire colon up to the descending portion. Slight symptoms of ileus may develop or those suggesting ulcer of the stomach or duodenum.

In the differential diagnosis the important features are the complete if only temporary disappearance of the pain after certain postures, massage, etc., and the absence of characteristic points of pain. Because of the inflammatory changes the condition may suggest appendicitis but is not identical with it.

The surgical treatment should not be confined to an appendectomy. A toilet of the entire right half of the abdominal cavity should be undertaken; therefore sufficient long incisions must be made. Inflamed portions of the omentum must be resected as such an omentum may maintain colitis even in the absence of adhesion and bands. Adhesions, bands and membranes which inhibit peristalsis, fix coils of intestine to one another or cause linking of the transverse or ascending colon must also be removed. The hepatic flexure should also be sought out carefully. Usually it will be found bound by bands and adhesions. Occasionally the transverse is transformed in certain areas to firm but

The peripheral anastomoses in the regions of the hepatic artery and portal vein are too unimportant to assure nourishment to portions of the liver shut off from the chief afferent vessel. In rare cases the isolated portion of the liver may be nourished after ligation of the hepatic artery by the arteries of the hilum. The ligation of an arterial branch and a branch of the portal vein preliminary to resection of the liver makes it necessary to keep to the line which separates the tissue attacked by necrosis from the healthy tissue. Theoretically this line (the medial border of the gall bladder or the right border of the caudate lobe) makes resection of a lobe possible on account of the danger of progress. Through ligation of the portal vein, hemorrhage may be controlled best on the resection surface (Wendell).

The hepatic veins have three directions and take their directions according to the anatomical division of the lobes of the liver. For these the employment of intrahepatic ligation comes into consideration since they are injured by the incision. (Lynch) (2)

Moore, F. D. The Associated Pathology of Gall Bladder Disease, with Further Notes for Cholecystectomy. *Surg. Gynec. & Obst.* 4, xxv 128

Gall bladder infection is more frequent than is generally supposed and disease due to or associated with disease of the gall bladder is very extensive and frequently overlooked. Disease associated with cholecystitis may include practically any abdominal organ and any structure in almost any part of the body.

In no case of diseased gall bladder should the surgeon be content with the removal or other treatment of the primary condition alone. He should look also for possible secondary involvement.

The author urges cholecystectomy as preference to cholecystostomy. He cites as his reasons that following cholecystectomy the greater percentage of cases have no recurrence of symptoms, fewer adhesions are formed, biliary fistulae occur much less frequently, the reformation of calculi is very unusual, cholecystitis does not recur and convalescence is more rapid. (H. A. McKeown) (M.D.)

Lecroix, P. and D'Astous, G. The Repair of the Principal Bile Duct or Its Implantation into the Gastro-duodenal Junction in Difficult Cases. (La réparation de la voie biliaire principale ou sa dérivation dans le tube digestif dans les cas difficiles). *J. de chir.* 9, 12, 3

Formerly there were only three operative methods to re-establish the continuity of the principal bile duct viz. direct suture of the extremities of the severed canal, anastomosis with the duodenum or stomach or anastomosis of the gall bladder to the intestine. Today, in addition to these procedures, there are three others from which to choose.

Suture of the two ends of the divided bile duct over rubber tube.

Hepato-duodenal or gastric implantation over rubber tube with suturing of the bile ducts and intestine in one or more planes.

3. Reconstruction of the bile duct by means of a rubber tube implanted in the stomach or duodenum without direct suture.

The author reviews and discusses the cases reported in the literature in which these methods are employed.

In the sixteen cases in which the first method was used there were seven operative recoveries, five later recoveries, one incomplete recovery, one complete failure and two deaths. The use of the second method in thirteen cases as followed by one immediate and complete recovery, five later recoveries, two incomplete recoveries, one unknown result, and four deaths. The twenty-three cases operated on by the third method consisted of two cases of accidental section in the course of biliary operation, six cases of stricture following a previous operation, five cases of neoplasms and ten cases of more or less old biliary fistula. They were thus among the most difficult types of cases met with in biliary surgery. The third method of operation is easier than the others and its results are better.

The twenty-three operations were followed by two unknown results, one partially successful result, two recoveries lasting for twenty-six and eight months respectively, fourteen complete recoveries, and four deaths.

From their study the authors draw the following conclusions:

Early suture simple approximation of the two ends over rubber tube, is suitable for cases in which the two ends are easily seen. Accidental section of the bile ducts with an immediately recognized loss of substance seems to be the typical indication for this method.

Hepato-duodenal or gastric implantation over a rubber tube with direct suture is suitable for cases in which the upper end can be reached so that a supporting suture can be applied, a little of the biliary canal can be dissected, and the duodenum or stomach can be mobilized in an operative region not modified too much by adhesions.

Reconstruction of the biliary tract by means of rubber tube with gastric or duodenal implantation and without direct suture is applicable to the most complicated surgical cases, particularly fistulae of the principal bile duct.

The use of the rubber tube is an important addition since direct suture is often impossible and but is not indispensable and there should be no hesitation in counting on when it entails difficult and dangerous maneuvers.

Omentoplasty may be added to the operative procedure as it permits better reconstruction of the principal bile passage.

A greater number of cases is necessary to judge of the value of these operative procedures but the number is already sufficient to warrant the conclusion that the operations give very good results in particularly difficult cases. The chief danger is ultimate stricture of the anastomosis and ascending biliary infection. (A. Barzua)

Zoepffel, H. Preliminary Stages of Acute Necrosis of the Pancreas, and a Contribution to the Advantages of Early Operation in Cholelithiasis (Vorstellung der akuten Pankreasnekrose, ne gleich ein Beitrag zur Zweckmassigkeit der Frueh operation bei Gallensteinleiden) *Klin. Wochenschr.* 9 303

Acute necrosis of the pancreas was observed ten times in 150 operations on the bile ducts. The condition is a complication of cholelithiasis. When a stone is incarcerated in an end portion common to the excretory ducts from the liver and the pancreas the pancreatic ferment is activated by the bile which passes over into the pancreas taking infectious material with it. Autodigestion of the glands and acute necrosis of the pancreas result. If infection is present the latter may be caused also by obstruction of the flow of the pancreatic secretion alone.

The prognosis is extremely unfavorable if the acute stage persists a number of days. It is more favorable in cases running a subacute course with occasional flare ups, even though the necrosis of the pancreas may be extensive. The preliminary stage of acute necrosis of the pancreas is seen in cases which have not yet progressed so far as the formation of necrosis, but the pancreas and the tissues immediately surrounding it are permeated and covered over by glassy edema. The thorax observed three such cases with typical gall stone findings. Operation was performed within the first twelve to twenty-four hours. No severe changes had yet been caused in the pancreas by the occlusion of the choledochus. These three cases were cured, while in those which were operated on later than twenty-four hours from the onset, the mortality was 60 per cent.

The conclusion drawn is that cholelithiasis should be operated on early. The possibility of a begin-

ning acute necrosis of the pancreas must be borne in mind when there occurs in the course of cholelithiasis an attack of pain in the upper abdomen which is similar to that of perforation, but localized more to the left.

FICKER (Z)

Lindsay E. C. A Case of Multiple Pancreatic Calculi Removal and Recovery *Lancet* 9 2, com.

Multiple pancreatic calculi are rare, and relatively few cases of operative removal have been reported. Lindsay's case was that of a man aged 40 years who had a fifteen year history of colicky epigastric pain lasting for periods of two days to week. Food increased this pain. There was no radiation. Slight but continuous wasting had been noted for two years. There was no jaundice and there had been no change in the stools.

At examination the urine was found free from sugar. The X-ray showed irregularity on the lesser curve of the stomach which suggested a penetrating ulcer but another view showed that the shadows were outside of the stomach.

At operation the pancreas was exposed by an incision in the gastrohepatic omentum and an incision made over the most prominent of the masses felt in the organ. The duct was opened and six large stones were removed. The ducts were dilated, their walls were thickened, and the gland tissue was relatively thinned throughout. The duct was re-sutured and a tube drain inserted.

There was drainage from the tube for two days. On the sixth day the tube was removed. Convalescence was uneventful.

The calculi consisted of calcium carbonate with a small admixture of oxalate of calcium and magnesium. Cultures of the pancreatic fluid were negative.

S. J. SHERMAN, M.D.

SURGERY OF THE EXTREMITIES

CONDITIONS OF THE BONES, JOINTS, MUSCLES, TENDONS, ETC.

Bloodgood, J. C. Tumors of Bone *Northwest Med.* 317 220, 304

There are certain data in the history that are of great importance in the diagnosis of a bone lesion. If the patient is under 5 years of age and the X-ray shows that the lesion is central it is not sarcoma. If the X-ray shows that the lesion is periosteal, it is just as apt to be sarcoma as not sarcoma. If the X-ray shows that the lesion is periosteal and involves more than one bone it is not sarcoma or metastatic carcinoma or a boneless disease. A multiple periosteal lesion is benign but may become malignant later as in the so-called Paget type. If the lesion is central and multiple it may be benign or malignant. If the patient is under 5 years of age it is not malignant, but if the patient is over 5 years it may be one or the other.

In interpreting the X-ray picture it is of great importance to compare the diseased bone with the opposite bone. It must be remembered that there may be an area of bone formation in front, and of bone destruction behind, and if they overlap the X-ray may not show the process.

The author has found Bence-Jones bodies in the urine only in cases of multiple myxomatous and metastatic carcinoma. Syphilis is also suggested by periosteal lesions, but in no case of syphilis is there intact bone shell with a central shadow.

If the patient with a central bone lesion is under 5 years of age sarcoma is excluded and the diagnosis rests between the common bone cyst, the less frequent giant cell tumor and the rare chondromyxoma. The common bone cyst usually becomes cured without any treatment. Giant cell tumors predominate in patients over 5 years of age. Myxoma may occur at any age and is the most difficult of all bone tumors to cure without amputation.

The probability of cure of perosteal or central sarcoma is present in not more than 4 per cent of the cases. Giant cell tumors, bone cysts, and syphilitic periostitis are formerly confused with sarcoma and included in the percentages of cure by amputation. The author does not favor amputation for central bone tumor unless the disease has destroyed the limb because the majority of cases are not sarcomas and the probability of cure is very small. Delay will do a harm in cases of chondroma, myxoma, and bone cyst, but the giant cell tumor which can be permanently cured without loss of function is cured more easily if there is an intact bone shell. Only curettage is necessary. Left alone the giant bone tumor will destroy the bone shell and infiltrate the soft parts as completely as the most malignant sarcoma, but will never give rise to metastases. After curettage, the author uses carbolic acid and alcohol 90 per cent zinc chloride, or the calcium. Actinal cauterization does not interfere with ossification.

Bloodgood favors immediate operation on all patients over 5 years of age who have a bone with a central cavity with shell. Myxoma should be cut into with a cautery only. If not it will recur as it will be transplanted into the fresh wound. Chondroma also is unplanted in this manner. All the cauterization carbolic acid alcohol and zinc chloride may be used. The treatment of the cavity depends upon its size. Some cavities are left open, others are closed and others require bone transplantations. Da Costa L. L. M. M. (N. D.)

Perna, G. The Ossification of the Acetabulum and the Significance of the Supra Acetabular Tubercle in Man. (*Sulla ossificazione dell'acetabulum e sul significato del tubercolo sopracetabulare nell'uomo*) *Chirurgia e Organi del movimento*, 9, 14, 185.

The author's long and well illustrated article is an epitome of the various theories as to the development of the acetabulum and reports his own investigations in the Anatomical Institute of the University of Bologna. From his studies Perna reaches these general conclusions:

In the formation of the walls of the acetabular cavity in man three bones take predominant part. Because of their situation these may be called the anterior posterior and superior acetabular bones.

The anterior acetabular bone originates from the confluence of multiple bony nuclei which have two different age periods and are of different morphology. The first to become manifest is the nucleus of the acetabular bone in the fundus of the acetabular cavity. This is successively added (about the second half of the eighth year) other secondary nuclei—the lateral and medial ischio-pubic and pubo-mechanic nuclei of Staurengli—which together constitute the complementary ventral bones of the acetabular cavity. At its complete development (the seventeenth year) the anterior acetabular bone almost entirely invests the lateral extremity of the horizontal branch of the pubis

and extends more or less on the ventral part of the acetabular surface of the ilium, definitely forming all the ventral segments of the facies lunata. It can be distinguished, however, glenoidal and an articular lamina which form the correspond- ing to the iliopectinal line. The first never projects beyond the lower margin of the semilunar surface, while the second is interposed completely between the ilium and pubis and in small part between the pubis and ischium corresponding to the more elevated portion of the ischiopubic articulation in the acetabular fundus. The upper sub margin forms the anterior segment of the acetabular ridge and shows a depression on the medial portion lateral to the iliopectinal eminence which may be called the ventral depression of the acetabular ridge. After the eighteenth year it fuses with the neighboring bones, first with the pubis, then with the ilium, and finally with the ischium.

The posterior acetabular bone originates from the confluence of anons bony nuclei which appear toward the ninth year in the dorsal cartilaginous branch corresponding to the cartilaginous acetabular ridge, and successively during the sixteenth and seventeenth years, fuse with the osseous nuclei which become manifested in the remaining ischio-pubic cartilage—the lateral and median ischio-pubic nuclei of Staurengli. After its complete development it occupies the entire extent of the ischio-pubic cartilage constituting a triangular bony edge interposed between the ilium and ischium and forming the cephalic half of the posterior segment of the facies lunata and the corresponding acetabular ridge. A thin lamina which continues its medio-lateral margin reaching the anterior contour of the great acetabular notch and the acetabulum does not ordinarily project beyond the limit of the semilunar surface. Its lower acetabular angle extends more or less regularly on the ischium and its upper angle and acetabular margin more or less on the body of the ilium. The middle part of the posterior acetabular bone is a depression which may be termed the dorsal depression of the acetabular ridge. After the seventeenth year this bone fuses with the neighboring bones, first with the ischium and then with the ilium.

The superior acetabular bone originates from a nucleus manifested after the eighth year in the thickness of the cephalic segment of the cartilaginous acetabular segment where it meets the marginal cartilage of the ilium. It later acquires the form of a triangular pyramid with an acetabular surface which completely or in part forms the upper segment of the facies lunata (head of the acetabulum) with an articular surface which first articulates and then fuses with the body of the ilium, and an extra acetabular or anterior surface. The margin interposed between the acetabulum and anterior surfaces forms the cephalic segment of the acetabular ridge which is differentiated by a thick elevation in the anterior surface of the bone under discussion. This elevation constitutes the supra-

etabular tubercle. When completely developed the bone may be quite isolated from the other acetabular formations but frequently articulates and becomes fused with the anterior and posterior acetabular bones. When this articulation does not occur more or less deep and extensive incursions occur in the spaces between the acetabular bones. These may be termed the cephaloventral and the cephalodorsal incursions of the acetabular ridge. The superior acetabular bone is itself independent of the epiphyseal nuclei of the inferior anterior iliac spine but after the eighteenth year fuses with it and then with the body of the ilium.

5. These three bones form the maximum part of the *facies lunata*. The fundus of the acetabulum is developed chiefly from the medium and partly from the ilium.

6. When the acetabular bones are well developed and articulate, the acetabular cavity is the deep and united by a raised acetabular ridge which with the exception of the dorsal and ventral incursions does not show any irregularities.

7. The anterior acetabular bone has special morphological importance since besides its epiphyseal character it contains portions of the acetabular bone which is considered a fourth fundamental piece of the innominate bone. The anterior acetabular bone represents the acetabular epiphysis of the pubis. The posterior and superior acetabular bones may be considered as epiphyseal bones of the medium and ilium respectively. The superior acetabular bone is a characteristic of the human species because of the important function of the cephalic ends of the acetabulum in maintaining the entire weight of the trunk in the erect position.

8. The bony ridge of the supra-acetabular tubercle which is separated from the acetabular ridge by a sulcus formed in the extra-acetabular surface of the upper acetabular bone gives implantation to the iliofemoral ligament of the hip joint and frequently to the minor iliac muscle. This also is characteristic of the human species as such formations have great functional importance in the erect position.

9. On account of its origin and its independence of the other acetabular formations the superior acetabular bone must be of special practical importance because if it is absent or malformed or there are lesions of the muscles inserted in it true malformations of the hip joint result from non-development or deficiency in the highest part of the *facies lunata*. As this is characteristic of the human species, the malformations due to defective development reduce the acetabulum to the forms found in lower species.

W. A. BAX

Alberti, O. The Metatarsophalangeal Syndrome of Koehler (La sindrome metatarsofalangica di Koehler). *Chir. d'organi e movimenti* 9, 2, 4, 560.

The author reports six cases of Koehler's syndrome of the second metatarsophalangeal joint. These

cases varied in their intensity but were identical in character there being in every instance pain in the joint in the erect position and in walking, varying swelling on the dorsal surface, apparent shortening of the second toe, and irregularity of the joint noted on palpation, etc. The most interesting and characteristic findings are those shown in roentgenograms, i.e., thickening of the distal half of the second metatarsal, frequently with disappearance of the margin and varying deformity of the metatarsal head which in the beginning suggests osteochondritis dissecans but later shows widening and flattening of the articular surface. The proximal phalanx of the second toe is secondarily deformed by a bending of its base on the articular surface. In consequence the articular space becomes altered. Sometimes the periarticular tissues show calcification and osteophytic formations.

The course of the condition is very slow and the prognosis is usually favorable. At most resection of the joint is necessary.

The pathogenesis is complex. The condition has been attributed to various causes. The author ascribes it to the following factors:

The presence of anatomicophysiological conditions responsible for the selective localization of the lesion in the second metatarsophalangeal joint, the head of which is normally the principal point of support of the foot and hence is exposed to the greatest effort. The second toe projects in front of the others and therefore is more exposed to trauma.

General pathologic conditions predisposing to alterations in the growing layer of the articular cartilage and interfering with chondral ossification of the metatarsal head.

3. Concomitant causes represented especially by trauma such as the weight of the body acting on tissues already pathologically disposed.

From such causes a disturbance in uterine might arise in the process of chondral ossification of the metatarsal head, causing first osteochondritis and later deforming chronic arthritis.

W. A. BERNARD

Roth, P. B. Two Cases of New Metatarsal Disease. *Proc. Roy. Soc. Med. Lond.* 9, xv, Sect. Orthop. 80.

The author's first case was that of a woman, 37 years old, who complained of pain and swelling in the right foot for five weeks. The X-ray showed swelling on both sides of the second metatarsal bone. There was no history of injury. The Wassermann test was negative. After treatment with 3 gr. of potassium iodide daily for one month, the patient much better but not cured.

The second case was that of a nurse, 23 years old, who complained of pain and swelling on the dorsum of the left foot. The base of the second and third toes. The X-ray showed swelling on the outer side of the shaft of the second metatarsal bone, at the junction of the middle and distal third and a slight

elling at the junction of the proximal and middle third. The Wassermann test was negative and there was no history of injury. The patient was treated with complete rest and 3 gr of potassium iodide a day for six weeks. A complete cure resulted.

JOSEF MITSCHKE, M.D.

FRACTURES AND DISLOCATIONS

Schlegel, A.: An Unusual Case of Retrosternal Dislocation of the Clavicle (In settembre Fall on Levato claviculari retrosternali). *Monatsh. med. Chir.* 9, 112, 5.

The author first gives a theoretical explanation of the movements of the clavicle in the sternal joint and of the evolution of a retrosternal dislocation of the clavicle and then reports a case of the latter type.

The diagnosis was certain from the appearance. In addition, there were symptoms of intrathoracic pressure and distinct difference in the pulse in the two carotid and radial arteries. Motion in the arm was limited to lateral extension to the horizontal.

Operation was performed, as in most of the cases of retrosternal dislocation of the clavicle hitherto reported. Reposition with fixation was not possible on account of complete cutting away of the capsule; therefore a piece 3 cm. in length was resected from the clavicle.

At the end of three months an almost complete cure had been obtained. It would thus appear that resection is the method of choice in the treatment of dislocation of the clavicle with pressure symptoms.

DEWEES (Z)

Senior F. D.: Fracture-Separation of the Lower Humeral Epiphysis. *Practitioner* 932, 113, 244.

Fracture separation of the lower humeral epiphysis, which is seen most frequently between the ages of 6 and 15 years, may be due to direct or indirect violence.

There are two common types. The first consists of partial or complete separation of the epiphysis with a small fragment from the diaphysis which remains attached to the epiphysis. In the second the line of fracture is just above the epiphyseal line or may partially involve it. Usually the line of fracture is through the condyles. The latter type is the more common of the two, and is usually due to direct violence. The former is usually caused by indirect violence.

When the violence is indirect, the forearm with the small humeral fragment is driven backward, the upper end of the lower humeral fragment is tilted forward, the periosteum on the posterior surface of the humerus is extensively stripped up, the structures of the elbow joint are injured, and there is extensive effusion of blood into the surrounding tissues and subcutaneous tissues.

Manipulation of the elbow or arm for the purpose of diagnosis must be avoided. An accurate diag-

nosis is impossible without an X-ray examination. Roentgenograms in two planes and control roentgenograms of the sound elbow for comparison are necessary.

If any degree of displacement is present, an attempt at reduction should be made immediately under full anesthesia. The arm should be held firmly while steady traction is applied to the wrist with the forearm fully extended. While traction is maintained the forearm should be slowly flexed. The manipulation should be slow and firm. Reduction sometimes fails because of extensive effusion. A delay of a few days to allow absorption of the effusion defeats its own object as the blood has organized, causes a still more solid resistance and callus is formed very rapidly.

If the displacement cannot be corrected by non-operative means, open operation is indicated. The incision should be made in the midline on the posterior surface of the arm. A metal or other fixation should be inserted. In the after fixation the elbow should be acutely flexed and the hand supinated.

Complete anatomical reduction is necessary to prevent excessive callus formation which obstructs movement at the elbow joint. The greater the displacement, the greater the amount of callus that will be formed.

During the after treatment too great activity either in massage or movement increases the tendency to callus formation, but prolonged immobilization with the forearm in flexion is followed by pronounced rigidity of the elbow.

The elbow fixes the extremity in the flexed position, with the elbow region free or lightly covered. To relieve the pain and to aid absorption, the greatest effleurage is applied to the elbow region from the first day. After a week or ten days the arm is released daily and slightly active motion is given the arm then being replaced in the same splint. At the end of the third week the arm is placed in a sling and further voluntary movements are encouraged. Passive motion is to be avoided.

Following operative reduction the arm is left untouched until the tenth day when the sutures are removed. After several days the same routine is followed as in the non-operative cases.

DANIEL H. LEVINSKY, M.D.

Staffel, F.: Traumatic Dislocation of the Hip in the Child (Contributo allo studio della lussazione traumatica dell'anca nell'infanzia). *Chir. d'org.* di movimento 9, 604.

Traumatic luxation of the hip is very rare in the young. Of 83 such lesions observed at the Ruzzi Institute of Bologna since 1900 only three were found in young persons. Two of the young patients were under 10 years and one was 14 years of age. All three had luxation of the hip caused by fall. Fractures of the neck of the femur are much more common in the young.

In the literature the author has been able to find only forty nine cases of traumatic luxation of

the hip in the young. The most common type of luxation is the posterior luxation. This was of the iliac type in thirty three cases and of the ischiatic type in six. The tensor luxations were of the suprapubic type in two cases, the iliopectoral type in one and the obturator type in six. In one case record the type is not given. Thirty seven of the patients were males, and eleven, females. In twenty two cases the left hip was luxated and in seventeen the right hip. Ten case records do not state which hip was affected. Two of the author's three cases were posterior iliac luxations of the left hip and one was an anterior suprapubic luxation of the right hip. All were operatively reduced and cured.

Spontaneous reduction as effected in only one of the forty-nine cases. Manipulative reduction is usually easy if done soon after the injury. Old cases time should not be wasted in attempts at reduction.

With the technique which is used today there need be little fear of sepsis; in only three operative cases are there any septic complications. Whether the reduction is effected by manipulation or operation it should be maintained by means of a carefully moulded plaster cast. Failure is due principally to the use of traction apparatus which is not sufficient to maintain the limb in the desired position.

W. A. DAVIS, M.

Epsstein, G. I. The Surgical Treatment of Habitual Dislocation of the Hip (Zur operativen Behandlung habitueeller Hüftluxationen). *New York Arch.* 9: 14, 30.

The observation of a case in which after resection of a tuberculous hip bony ankylosis occurred and resulted in the formation of a bony wall of the iliac acetabular roof which prevented upward dislocation of the femur suggested imitation of the method indicated by nature by surgical measures. The method of preventing recurrence of dislocation of the head of the femur by cutting from the ilium a flap of bone with periosteum attached, defecting it, and stitching it to the articular capsule was originated by Koenig, but the two children on whom Koenig operated died of intercurrent disease before a permanent result had been achieved.

The author reports the case of boy, 6 years old, who was operated on by Polenoff. This patient suffered from paralytic dislocation of the left hip and showed other result of poliomyelitis which seriously affected all limbs. The gluteal muscles were paralyzed but the muscles of the thigh were better developed than those of the other side. Through curved incision beginning two and one half fingerbreadths behind the tensor superior muscle of the ilium and extending to the tip of the trochanter and by partial transverse dissection of all three gluteal muscles the rotular capsule was widely exposed and section measuring 3 cm. was resected uninvaginated in the neck portion and sutured together again. A semicircular incision

was then made in the periosteum of the ilium 4 cm. above the margin of the acetabulum and a bony lamella shaped like a fan and latched with its periosteal covering, deflected downward, and made fast to the capsule with three sutures. A roentgenogram made six months later showed that the artificially created protective roof was well established. There has been no recurrence of the dislocation.

105 KEEPER STREET, SACKEN (Z)

Kopitz, J. Deformity of the Head of the Femur as an Obstacle to the Complete Cure of Congenital Dislocation of the Hip (Die Deformation der Kopfgegend des Femur als ein Hindernis der vollkommenen Heilung der kongenitalen Hüftgelenkluxation). *Oswest. Zeits.* 9: 187, 30.

Deformities at the proximal end of the femur are divided into the following groups: (1) congenital changes in the head, the neck, or the entire proximal end of the femur; (2) congenital deformities plus secondary changes which have developed from the use of the extremity affected by dislocation of the hip; (3) changes which have arisen in connection with the reduction, retention, and after treatment of the head of the femur; (4) pathologic changes which arise in the reduced head of the femur in the course of treatment after an apparently complete cure.

Following discussion of the significance, the basis, the relations, and the origin of these deformities the author draws these conclusions:

Congenital deformities and those arising secondarily before reduction at an age when the head, therefore normal, is still educable—provided there is concentric stratification in the joint socket—cause little or no disturbance in the function of the joint after reduction.

Deformities of the head which arise during treatment or as a result of after treatment tend to be permanent. The functional success of the treatment is not complete; limping persists in some degree. Recognizing their causes, we must do all in our power to guard against the development of deformities. By more frequent changing of dressings we must inform ourselves in each case whether the articular capsule or the muscles have contracted sufficiently to flow us to terminate the period of fixation. When fixation has not been continued too long there is no need of after treatment to relieve contracture. There can be no set rules for all cases.

3. We cannot prevent disturbance of bone formation in the femoral head, the development of an osteochondritis juvenilis. This process is of a progressive character and often leads to destruction of the joint (arthritis deformans juvenilis) but in other cases becomes stationary at a certain stage of development. Such destruction of the head is not directly connected with the congenital dislocation of the joint as it may be observed in joints which were normal at birth. For reasons still unknown, however, it is seen with remarkable frequency

in association with congenital dislocation. The disease process may begin during treatment or some time after it has been finished, but always before the end of puberty it disturbs the good result which had been regarded as secure. On the

basis of these experiences we cannot regard reduction of the joint with good function as a permanent cure unless complete ossification of the epiphyses of the head of the femur has occurred.

VO LO MAYER (2)

SURGERY OF THE SPINAL COLUMN AND CORD

Prinster G H and Spillar W G. An Analysis of Fourteen Consecutive Cases of Spinal Cord Tumor. *J Am Med Ass* 1922 10:14, 1014

In twelve of the fourteen cases the tumor was accurately localized, accessible, well encapsulated and distinctly operable.

In thirteen cases pain was the first symptom and conspicuous. The original pain rose persists throughout the course of the disease, but in the later stages is more widespread in distribution. It is therefore an important localizing sign. In four cases pain was present for three or more years, and in three cases approximately two years elapsed before motor signs appeared.

According to the location of the tumor the most common diagnostic errors are pain associated with movements of the neck diagnosed as Post. diserve pain referred to the shoulder diagnosed as rheumatism, pain referred to the shoulder and arm diagnosed as neuritis, pain referred to the precordium diagnosed as angina pectoris, pain referred to the upper abdomen diagnosed as duodenal gallstones, pain referred to the lower abdomen diagnosed as appendicitis, and pain referred to the lower extremities diagnosed as sciatica.

Given a case with pain of definite localization which is aggravated by movement, coughing, or sneezing, and persists for months or longer in the original site with occasional remissions but without variation except in degree the possibility of spinal cord tumor must be borne in mind.

The distribution of pain and paresthesia differ in that pain, root phenomenon is always referred to the same side, that of the lesion, while paresthesia, cord pressure symptoms, may be homolateral, contralateral, or bilateral.

In the classical description of the clinical course of spinal tumors three cycles are mentioned: the cycle of root pain, the Brown Sequard cycle, and the cycle of motor and sensory paralysis. In not one of the fourteen cases there typical Brown Sequard picture.

Motor disturbances were present in each of the fourteen cases in greater or less degree according to the size and location of the tumor.

Spasticity is always forerunner of weakness or paralysis and in root cases the difficulty in locomotion is due to the spasticity rather than atrophy.

The sequence of symptoms is pain, paresthesia, and paralysis.

Too much stress must not be laid on the presence of spinal block. This is late rather than an early symptom. Xanthochromia as present in only five cases and its duration as five, three, and two years. The Queckenstedt or Ayer test for spinal block should be applied in all cases as it may reveal block before xanthochromia appears. A positive finding by either method should be regarded as only confirmatory, however more negative findings do not preclude the presence of tumor and positive findings have been noted in cases of lesions other than tumors.

It is a matter of very little consequence, when once the segmental localization is established, whether the tumor is intradural or extradural or what its position is with relation to the spinal cord. In the cases reviewed there were no intramedullary growths.

Two of the patients died. In one of these cases two-thirds of the tumor as within the intracranial cavity only one-half of the diaphragm remained the respiratory act, and respiratory breakdown occurred during the operation. The other death was due to embolism.

When making the opening in the spinal column too low it should be borne in mind that the level of the lowest lamina to be removed should correspond to the location of the segment representing the highest level of sensory loss.

To prevent recurrence the operator should remove with the tumor that portion of the meninges from which it originated. In the cases reviewed there was only one recurrence, second operation was advised but not permitted.

Recovery of function is a matter over which the surgeon has no control. Assuming that the tumor was removed without injury to the cord, the return of function will depend on whether the symptoms are due to pressure or to cord degeneration. If to the former functional recovery will be complete if to the latter it will be more or less limited. When the symptoms are due to pressure alone, sensory and motor function recover surprisingly promptly even when the tumor was present for several years. Within a few days of the operation, first sensory and then motor function returns.

There are only two cases in the authors series with absolutely no return of function.

The article contains several interesting illustrations.

CARR R. BRIDGES, M.D.

SURGERY OF THE NERVOUS SYSTEM

Sachs, F. and Malone J. V. An Experimental Study of Methods for Bridging Nerve Defects, With Description of New Method of Autotransplant (Auto-Autotransplant) *Arch Surg* 1922, 314

The authors have experimented in nerve repair on dogs to ascertain the best of three methods to employ when end-to-end anastomosis is impossible.

The most careful technique used, including very gentle handling of the nerve, a bloodless field, the control of bleeding in the nerve by means of cotton pledgets soaked in warm saline solution or the injection of warm saline solution into the nerve and the approximation of nerve tissue to nerve tissue.

Several methods of repair were used but all except three are discontinued. The latter are as follows.

Anastomosis of the central and peripheral ends of the injured nerve into longitudinal incisions in normal nerve. The freed cut-ends of the injured nerve are sewed carefully into longitudinal slits in nearby nerve. In eighteen dogs the peroneal nerve was cut and then sutured to the tibial nerve.

1. Anastomosis of the central and peripheral ends of the injured nerve to flaps cut in the same quadrant of normal nerve. The peroneal nerve was sutured to flaps in the tibial nerve in fifteen experiments.

2. Autotransplantation of half of the central end of the injured nerve, the segment removed being just long enough to bridge the defect (autotransplant).

The nerves operated upon were exposed to various intervals and tested with electricity peripherally by the muscle contractions, and centrally by reflex stimulation of respiration.

The animals were finally killed and the nerves examined macroscopically after being cut transversely into sections 5 to 10 microns thick or longitudinally. In every fifth section as mounted so that the nerve fibers could be traced systematically.

Other tissue the nerve tissue was unsatisfactory for bridging nerve defects. The most successful method for large defect consisted in implanting the nerve ends into an adjacent healthy nerve.

Hemorrhage from nerves may be controlled by distending the end of the nerve with salt solution.

Accurate approximation of the nerve ends is essential for the best results. Fine silk sutures far less reaction than catgut.

The conclusions drawn by the authors are summarized as follows.

1. Nerve fibers will grow down the trunk of a healthy nerve through longitudinal incisions without impairing function and some of the fibers will connect up with the peripheral end. It is therefore of advantage to implant both ends.

On account of the branching of regenerating fibers sufficient number of axons are produced

when a nerve is cut longitudinally to fill the sheaths in the implanted nerve indicating that end-to-end anastomosis could be satisfactory. This technique has been used successfully in faciohyopogonial anastomosis.

3. Malone's test to determine whether nerve has crossed a line of suture is a valuable index of nerve regeneration.

4. Absolute alcohol may inhibit, but does not prevent, neuroma formation.

5. Accurate approximation is the most important factor determining nerve regeneration. Because of the presence of internal plexuses in nerves it is not so essential to maintain the original anatomical relation as was heretofore supposed. Whenever nerve regenerates, axons are formed at the regenerating end and consequently the central end of fiber does not necessarily connect with its peripheral end.

6. The method of autotransplants is to be preferred to cable transplants because no normal nerve need be injured and the operation can be performed in one field.

7. The double implantation method cannot be used if the nerve to be implanted is larger than the other nerve and if there is adjacent nerve.

8. The second type of transplant has no advantages over the others.

9. The method of choice for bridging large defects is the double implantation method of anastomosis. Its advantage over the autotransplant is that some fibers have only one suture line to traverse.

MARCUS HOBART M.D.

Latarjet A. Resection of the Nerves of the Stomach. Operative Technique and Clinical Results (*Réssection des nerfs de l'estomac, technique opératoire résultats cliniques*). *Bull Acad de Méd Paris* 9, 1922, 68.

The extrinsic nerves of the stomach constitute three groups. The group of the lesser curvature composed of the gastric branches of the anterior and posterior ganglions situated at the interior of the small omentum. The second or duodenopyloric group is constituted of filaments coming from the hepatic nerves which are situated chiefly to the right of the pyloric orifice and approach the duodenopyloric caudal in the upper part of its posterior surface. The third group is that of the greater curvature which is constituted of filaments coming from the coeliac plexus and is found only in the transverse segment of the stomach.

The author carried out experiments on dogs to study the effect of blocking the extrinsic nervous system of the stomach by section and of stimulating the pneumogastric or sympathetic branches.

From the point of view of motility the stomach may be divided into two distinct segments. The first is the critical portion. Section of the nerves

of this segment diminishes tonicity while electrical excitation of their peripheral ends causes contraction ring which is not associated with peristalsis. The second motor section is the *transverse part*. Peripheral excitation of the nerves distributed here provokes peristalsis which is propagated to the pylorus.

Total blocking does not cause suppression of gastric movement. Section of the nerves causes an immediate vasodilation which does not extend to the gastric mucosa.

The anatomical and experimental findings have induced the author to try nerve section or resection of the gastric nerves in clinical cases in order to obtain (1) a diminution of *sensu crues* in the excoriated territory (2) diminution in the tonicity and frequency of gastric contractions and (3) diminution of acidity. The technique of the resection of the various nerve groups is described. Such a resection was done in twenty-one cases viz six cases of tubercular gastric crises, six of gastric or pyloric

ulcers, and ten of gastropathies without any apparent lesion.

In the gastric crises of tabes the operation is less severe than other operations usually performed for the condition but has only a symptomatic effect, relieving pain and perhaps hypersecretion.

The value of the operation in the treatment of ulcer has not been determined. In all such cases the thorax supplemented by gastro-enterostomy. All of the patients were greatly benefited and may be considered cured but this result may be due to the combined operations.

Blocking of the nerves is indicated chiefly by gastropathy with symptoms indicating disturbance of function but without any apparent lesion. Frequently in such cases gastro-enterostomy is ineffective while nerve blocking is successful. Eight of ten cases operated upon in this manner were cured. One of the ten other patients as it turned out had very severe gastric crises, and the other died from an intestinal complication. W. A. BARNES.

MISCELLANEOUS

CLINICAL ENTITIES—GENERAL PHYSIOLOGICAL CONDITIONS

Primrose A. The Secondary Manifestations of Malignant Disease. *Ann Surg* 912, LXVI, 3.

Secondary cancer metastases occurs chiefly through the lymphatic channels and present great anxiety to both the secondary tumor or tumors may exceed the primary.

Handley demonstrated continuous extension of cancer cells from the breast along the lymphatic channel to the glands of the axilla and the infra-axillary and supra-axillary regions, the pleura, the lungs and the opposite breast thence to the epigastrium and the axilla by the lymphatics of the round and falciform ligaments to the liver and thence to the peritoneal cavity.

Enay states that for months or years the soil is prepared in lymph node draining primary focus of carcinoma, the most recent changes consisting of moderate swelling of the gland diffuse hyperplasia, catarrhal exfoliation of sinus endothelium, multiplication of follicles and at later period trophic and fibrosis or fat in anion of the node. These changes he attributes to the absorption of uterine and bacterial toxic product from the tumor.

On the other hand, carcinoma of the breast may be responsible in rare instances for distant metastases while the local lymph glands escape.

When clinical diagnosis of primary carcinoma has been made a metastatic disease the involvement of lymph glands even if there is no gross manifestation of the condition.

In involvement of the superficial lymph glands at the root of the neck on the left side is most frequently observed in cases of cancer of the body of the stomach, the thoracic duct being the channel of

In 1900 Treves first drew attention to these facts in 1906.

Abscess formation in connection with the secondary manifestations of malignant disease is due to the intrusion of pyogenic organisms from an ulcerating surface. Primary carcinoma of the appendix is in some cases connected with the development of tuberculous nodules which are wholly a manifestation of that pathological process.

Cancer of the rectum and rectosigmoid, secondary metastases are found in the lymph glands and in the liver.

Sometimes a single lymph gland becomes the seat of metastatic growth, the other nodes of the neighborhood showing no evidence whatever.

Implantation of carcinoma upon serous surfaces occurs with great frequency especially within the various sac of the peritoneum as in general abdominal carcinomatosis. The implantation and dissemination of cancer during operative procedures is a danger which must be guarded against in operative technique.

The dissemination of malignant tumors may occur through the blood stream. This is characteristic of sarcomata because of the fact that these growths are closely associated with the blood stream in their intimate histologic structure and their immediate surroundings. Malignant sarcoma of bone rapidly metastasize in the lungs, as do also those which occur in the kidney in young children. Many tumors, both simple and malignant, such as certain endonodromata and the hypernephroma first described by Grainger, invade the blood vessels by direct continuity of growth.

Metastases in bone may form by direct spread from the primary growth or through the blood stream or lymphatics. Bone is destroyed at the site

of the growth and spontaneous fracture of a long bone may occur. In some cases the presence of the growth may not be suspected by the patient or the physician.

MORRIS H. KAHN, M.D.

Mayo, C. H. End Results in Cancer as Influenced by Type, Reaction Location, and Age. *Ann. Surg.* 9, lxxvi, 308.

A greater number of persons in this country are killed by cancer in one year than were killed in our ten years of war. The disease is apparently increasing at a rate of about 3 per cent a year. It selects its victims from the mature and aged rather than from the young, the greatest mortality being between the ages of 40 and 60. Women are affected to a greater degree than men, the difference lies in the involvement of the organs of reproduction.

As a result of greater publicity regarding the disease and its destructive effects persons with suspicious lesions consult the physician earlier thus making it more possible to prevent or retard the development of cancer.

Environing and apparently causal due to degeneration or irritation contribute to the development of cancer. Pathologists and biologists have suggested many hypotheses. The view of these investigators seems to harmonize in the acceptance of regression or degeneration of the cells, loss of function, and proliferation as processes in cancer and of irritation as a factor. Within the last few years a dissenting group of pathologists has asserted that it is not the functioning cell which starts cancer by degenerating or regressing, but the immature, living, or repair cells of the embryonic type.

While several factors, such as age, exhaustion of the cell and loss of function or control, may have their place in the development of cancer, the chemical environment, however developed, is undoubtedly the most important stimulating force. The cells of youth are resistant to cancer but if once affected, the softer tissue and better lymphatic and vascular circulation render growth and metastasis more serious.

From the clinical standpoint great progress is being made in clarifying the cancer problem. A higher percentage of early operations, more radical operations, and marked progress in roentgen ray and radium treatment account for the improved end results.

The action of the roentgen and radium ray on the malignant cell is identical provided the lengths are equal. In the treatment of malignancy, especially in the cavities of the body, radiation therapy is most effective. When radium is applied directly to the tumor and the roentgen ray applied to the possible regional and deep metastatic areas. The action of the ray causes complete physicochemical change in which the cell becomes ordinated, the nuclear substance fragments and finally all powers of cell regeneration are lost. The debris is then carried off by phagocytes and replaced by connective tissue. When vascularity is one of the features

of the condition, radium is most excellent. The end result of both roentgen ray and radium therapy is the development of fibrosis, which often changes the type of malignancy.

From the standpoint of the pathologist, most important advances have been made. The immediate frozen section gives a true picture of the disease without chemical or embalming changes of tissue. Resistance to the growth is shown by lymphatic infiltration and round cell activity, which indicates the development of fibrosis. On the other hand there may be no evidence of fibrosis, but rather a very active cellular growth with proliferation, a most serious type, especially if operation is not performed before the lymphatics are involved. The probability of the cure of cancer can be largely foretold by the pathologist and depends in large measure upon the presence or absence of fibrosis.

In the Mayo Clinic the late results following operation for cancer have been found to tally very largely with the cell evidence.

SURGICAL DIAGNOSIS, PATHOLOGY AND THERAPEUTICS

Ten Broeck, C., and Bauer, J. H. The Tetanus Bacillus as an Intestinal Saprophyte in Man. *J. Exper. Med.* 9, xxxvi, 36.

It is well recognized fact that bacillus tetani is widely distributed in nature, but the role of man as carrier of this organism has received little attention. In the literature it has been repeatedly stated that man may carry the tetanus bacillus in his digestive tract. The statement is based apparently in each instance on the work of some other investigator than the author of the article and on the fact that this hypothesis offers the best explanation for certain idiopathic cases of tetanus and the cases following typhoid fever, dysentery and hemorrhoid operations.

The case which first interested the authors was one in which the source of the infection seemed to be fecal contamination of bed sore. In this article they report the results of the examination of the feces of seventy-eight persons and present evidence which seems to indicate that in some persons tetanus bacilli are normal inhabitants of the intestinal tract. With one exception their examinations were made on the feces of male Chinese boys in more intimate contact with the soil than the average European or American, therefore their findings may not be duplicated in the Occident.

It is often very difficult to obtain the organism in pure culture though they are plated repeatedly. Accordingly it is evident that there are organisms which interfere with the production of tetanus toxin or destroy it and that the injection of mixed cultures is not a reliable method for the detection of tetanus bacilli.

The authors examined forty-three stools of patients in the hospital and obtained tetanus bacilli from eleven (25.6 per cent). A few months later

these examined three five tools and voided tetanus bacilli from sixteen (44.7 per cent). In all they examined seventy-eight stools and obtained organisms which in their morphology and toxin-producing properties are tetanus bacilli from 34.7 per cent. While the results might indicate that carriage of tetanus bacilli are more numerous in feces in persons of the year the authors believe that the higher percentage of positive cases in the latter group examined is due to the fact that they were more expert in the examination.

They do not report the methods used in detecting the tetanus bacilli in mixed cultures but state that the only reliable method is the isolation of the bacillus and the demonstration that the culture forms a spore-producing toxin which is neutralized by tests as mentioned. The injection of mixed cultures as occurs in all for children bacilli may be proved their organisms are active with the production of toxin. From the results obtained it is concluded that the bacilli play a large role in the distribution of the toxin.

It is difficult to state just how these large numbers of tetanus carriers figure the case incidence of tetanus. The authors have examined only in record of tetanus following typhoid fever and even in though these cases are extremely common. They have seen one case of tetanus following fall which ruptured the testicle but did not produce tetanic signs. It is almost how rare the foreign population in China and it is very little tetanus due directly or indirectly to intestinal infection.

While the author is not aware of this in their list of tetanus post mortem is extremely common. One investigator in questioning hospital patients of their history found that of 4,465 children born, 6 per cent died of tetanus or tetos. It is quite probable that many of these deaths are due to tetanus the infection coming from the filthy dressings used on the cord. The bacteria are not proximate but they get some infection of the general body of life which is associated with the spread of tetanus bacilli by man.

The following conclusions are drawn from the experience:

The only reliable method for the detection of tetanus bacilli is the culturing of the suspected material the isolation of tetanus-like organisms and the demonstration that pure cultures form a spore-producing toxin which is neutralized by test as mentioned.

This method demonstrated tetanus bacilli in 34.7 per cent of stools from seventy-eight persons living in Peking.

The tetanus bacillus may be present in the digestive tract of persons who have been on a practically sterile diet for several months or more and one person may eliminate several million spores of tetanus bacilli in stool.

(Continued) BRILEY M.D.

ROENTGENOLOGY AND RADIUM THERAPY

Steinberger, A. The New Roentgen Universal-Flexure T. H. H. of Fleisher (New Roentgen University) and Steinberger, A. H. H. of Fleisher (New Roentgen University) H. H. H. of Fleisher (New Roentgen University)

The author recommends a table for the taking of X-ray plates which is designed by Fleisher an engineer of Zurich and is extremely useful because of its simplicity and adaptability. It is a solidly built table about a square table stand. Under a plate (or a frame) of 10 parts which are easily moved in the longitudinal and transverse directions is the column for the lower table which is movable in both directions and connected with the upper table. In addition to the upper table box with lead glass window there is a pivoting arm which may be moved up and down and carries a frame to hold the fluoroscope.

The apparatus can be used as a fluoroscope for exposure and for all examinations from below for the accurate vertical centring of part in the plate for critical and oblique exposures from above down and an accurate center exposure for exposure and a diagram of the table for the patient for a superimposed vertical exposure on the plate in the recumbent position for stereoscopic exposures with implantation and obliquity of the upper table and for the accurate localization of foreign bodies. (Herrn 7)

Nichols, H. H. The Roentgen Diagnosis of the More Important Tumors of the Long Bones Surg. Gynec. & Obst. 9: 33, 34

The first impression gained from the observation of roentgenograms of bone tumors is simply one of bone destruction of bone production or of both, but another aspect should be considered also which is the location of the tumor the condition of the cortex of the bone the age and sex of the patient the position of the soft part the point of origin of the tumor the character of the destruction and whether there are single or multiple lesions. In order to interpret the value of these observations it is best to classify bone tumors in four major divisions as follows:

(1) whether the tumor is of medullary or cortical origin (2) whether or not they are characterized by bone production by bone destruction or both (3) whether the cortex has been expanded or destroyed and (4) whether the tumor is in the bone or in the soft tissue. The most bone tumors belonging to one or more of these divisions are:

The pathological character of the most important bone tumors is as follows:

Round cell sarcoma is medullary in origin and extends in all directions. It breaks through the cortex of the bone and invades the soft tissue. This tumor may be found in bone but is usually seen in the cortex of the long bones. It is not so frequent as is accompanied by no bone production and occurs most often before the third decade of age.

Spindle-cell sarcoma presents most of the characteristics of round cell sarcoma, but is less invasive, the roentgenogram suggesting some limitation, especially in the medullary canal here slightly denser area appears at the periphery of the growth. This tumor does not metastasize as readily as the round cell sarcoma.

Pernosteal sarcoma is characterized by new bone production laid down in struts which are perpendicular to the shaft. The deposit of new bone is entirely in the soft tissues and does not reach the bone proper. The cortex may be destroyed later in the disease. This tumor is seen most often before the thirtieth year of age and, like all malignant tumors, is invasive.

Osteosarcoma is usually cortical in origin. Bone production is pronounced. As in perosteal sarcoma, the new bone is deposited in struts perpendicular to the shaft but, unlike the latter, is found within the tumor as well as in the invaded soft tissues. In general, the degree of malignancy may be determined to a considerable extent by the amount of new bone formation: the more malignant the type the more rapid the growth and the more limited the bone formation. Bone destruction is seen early; the cortex is destroyed and the medullary canal invaded.

Bone carcinoma is always metastatic and of medullary origin. As a rule it is seen at the middle of the bone; it the nutrient foramen. There is only bone destruction, no bone production. The tumor never involves a joint and is seldom found below the elbow or knees. It is essentially a disease of the later period of life.

Myloma is a true bone tumor. Several tumors of this type may occur simultaneously at different locations in the osseous system. They are always medullary in origin. They give first the appearance of expansion and later of destruction of the cortex.

Giant cell sarcoma is classified with the benign tumors. It is usually medullary in origin and found in the ends of long bones. It does not produce new bone in its growth, but shows marked bone destruction. The cortex is intact but expanded. The growth is multilocular; usually occurs after middle life and does not metastasize.

Bone cysts are medullary in origin and produce marked bone destruction. They tend to extend up and down the medullary canal, expanding and at the same time thinning out the cortex, so that they present a cylindrical contour and often cause pathologic fracture. They are usually multilocular; are found in the ends of long bones, and occur in early life. According to the author's experience, they are always simple.

Fibrocartilaginous destroy bone, are medullary in origin and occur as single tumors. They thin out the cortex but do not destroy it. New bone is formed and the cortex does not expand. The tumors have no single area of destruction and are not multilocular.

Chondro-osteoma and osteochondroma present either preponderance of cartilage over bone or of bone over cartilage. They are either medullary or

cortical in origin. They produce bone destruction with expansion of the cortex so that a cylindrical tumor results. They are usually multiple. Both bone destruction and bone production are present.

Osteoma is are cortical in origin and show marked bone production without bone destruction. They extend directly from the shaft or the body of the bone. They do not invade the tissues but push them aside.

Exostoses are bony growths from the cortex extending out from the body of the bone and pointing away from the nearest epiphysis. They are long and narrow and may have an osteoma at their end.

Brief descriptions are given also of such conditions as ossifying hematomata, myositis ossificans, teratomata of bone, syphilis and other types of osteomyelitis in which the roentgen picture may suggest a bone tumor. Points differentiating them from the tumors they resemble are enumerated.

ADOLPH HARTMAN, M.D.

Crane, A. W. The Roentgenological Aspects of Achylia Gastrica. *Am. J. Roentgenol.* 9: 57

The material which forms the basis of the author's study was approximately 1,000 cases in which, with few exceptions, the stomach contents were obtained in five or six fractions at fifteen minute intervals, beginning one-half hour after an Ewald test meal.

The importance of achylia gastrica to the roentgenologist lies in (1) its frequency in cases of gastro-intestinal pathology, (2) its association with abdominal pain, (3) its association with intestinal disturbances and (4) its influence on the interpretation of roentgen ray signs.

As regards the frequency of achylia gastrica Crane states that it was found in 6 per cent of the entire series of cases. In none of these cases was ulcer diagnosed or found later by examination or operation or autopsy. The author grants that the conditions may occur simultaneously but believes that this is exceedingly rare.

Pain was frequently associated with achylia but is a source as often difficult to find and sometimes inexplicable. In many of the cases it was traceable to associated lesions such as gastric cancer, gastric syphilis, gall bladder pathology, peritoneal adhesions, mucous colitis, or spasmolytic deformations. The diversity of causes of pain and the number of cases of achylia without pain suggest that the achylia itself may not be responsible.

The association of achylia with diarrhea has been emphasized by various authors. In Crane's series of 58 cases diarrhea was present in twelve. Mucous colitis was found only twice. The rapid expulsion of the barium meal with intestinal hypermotility may thus find a rational explanation if the roentgenologist is enabled to interpret his roentgen ray findings in conjunction with the laboratory sheet. The difference in the interpretation of the roentgen ray signs according to whether achylia is present or absent is most strikingly illustrated in cases with

the syndrome of duodenal ulcer. The duodenal ulcer and the achylia type of gastric peristalsis may often be indistinguishable. Very commonly (or if peristaltic contractions may be simultaneous. Thus, in connection with the rapid expulsion of stomach contents and the often incomplete filling of the duodenal bulb due to the rapid passage of the bolus, may appear to give the syndrome and the bulbary deformity of abut of the duodenum. If the stomach contents show a total absence of free hydrochloric acid, the roentgenologist should never make the diagnosis of duodenal ulcer without doubly proving the persistence of a characteristic deformity of the duodenal bulb and then excluding adhesions, pressure and reflex spasm as causes of the deformity.

Gastric cancer and gastric syphilis may both be associated with achylia; the roentgen signs being indistinguishable. Pernicious anemia and cancer may show a striking similarity with the blood picture and both may be associated with abdominal pain, emaciation, and achylia but knowledge of the achylia type of gastric peristalsis will very effectively confirm the absence of a filling defect and give added assurance to the roentgen ray interpretation.

In conclusion the author states that achylia is associated with such an extraordinary range of pathologic conditions that conclusions regarding it must be based only on very large series of cases. Because of the frequency of achylia in persons over 50 years of age it is probably confused with many pathologic conditions not related to it. The author therefore claims nothing for his figures except that they show in general a 30% personal experience regarding the roentgenological aspect of this interesting secretory disorder of the stomach.

ANDREW HARTMAN, M.D.

Dalberna, Laquerrière and Morel Kahn. A New Method for the Roentgenoperoscopic Exploration of the Kidney—Pneumoperinephros (Sur un nouveau procédé d'exploration radiologique du rein le pneumopérinephros). *J. de radiol. et d'Electrol.* 9, 19, 1930.

The authors refer to the method of pneumo-kidney introduced by Carelli and Sordelli of Buenos Aires in 1909. This method has lost favor because many have tried it did not obtain the results reported by its originators or met with accidents in its use. The authors, however, have used it successfully with slight modifications, in more than sixty cases. They insert the needle over the second lumbar process as in the original method but direct it more outward and downward. It thus traverses the thick trans-costal ligament of Henle and is kept away from the mediastinum and the fatty cellular tissue surrounding the arteries and veins. Oxygen or carbon dioxide is then injected. From 500 to 1,500 c.c.m. of oxygen is sufficient but a greater quantity of carbon dioxide is necessary.

The authors report eight typical cases of pneumo-perinephros exploration. The method is indicated when the classical methods of exploring the kidney

region have failed, and is of great value when there is close co-operation between physician, surgeon, pathologist, and roentgenologist. W. A. LARSEN.

Rothbart, L. The Treatment of Frontitis with the Roentgen Ray (Krankheitsbilder der Frontitis mit Röntgenstrahlung). *Arch. f. Klin. u. Exp. Med.* 91, 1931, 376.

The treatment of frontitis with the roentgen ray as reported in the German literature during the early years of the war but was later forgotten. Holzkecht speaks of long continued effect on the blood vessels. This must be due to direct action on the vasomotor system or indirect action on the circulation through an increase in the internal secretory activity of the connective tissue.

In twenty-six of the only seven cases treated by Rothbart a subject or objective cure, or at least great improvement, was obtained. The hard therapeutic ray was altered through 3 or 5 mm. of aluminum. According to Holzkecht prophylactic irradiation given in the autumn will prevent the development of chilblains during the winter.

WOLFAUER (Z).

Case, J. T. Technical and Clinical Aspects of the New Deep Roentgenotherapy. *Am. J. Roentgenol.* 9, 19, 1930.

The term new deep deep roentgenotherapy refers more particularly to the application of shorter wavelength radiation. It is further justified by the establishment of new information concerning the physical and biological factors underlying the principles of therapeutic roentgen ray applications, especially the behavior of scattered radiation, such for the first time as the history of roentgenology permits the attainment of reasonable degree of precision in dosage. Emphasis is laid upon the necessity of knowing the approximate wavelength of the ray. It is of understanding the rationale of filter use, choice of size and number of fields, and the target distance from which the application is made. It is assumed that there is agreement as to the rationality of employing a combination of radium and roentgen ray therapy whenever the situation of the pathologic lesion makes this possible. Only the treatment of malignancy is considered at any length in this article.

As regards the selection of cases for deep therapy it is probably wise to exclude at least for the present, those patients whose malignancy has progressed to the stage of advanced cachexia and utter hopelessness. In certain metastases in the bones, the liver or the lungs. In such cases the application of the radium does involve in the new method could very probably hasten the inevitable, and thus tend to bring unfair discredit upon the radiologist. As regards distinctly operable cases, the author holds with the majority that the treatment of choice is operation combined with such radiation as may seem appropriate. His estimation, pre-operative radiation is of even greater importance than post-

operative, the irradiated cells being in such degree and manner influenced by this treatment that there is certainly less danger of transplantation during the surgical interference.

Preparation is just as advisable when deep roentgenotherapy is to be administered in massive doses at single sittings as when major surgical procedure is to be followed. Preliminary rest in bed, attention to eliminative processes, dietary regulation, blood and urine examinations, and even a blood transfusion (if it is the type of case in which such a procedure would be considered before surgical operation) are essential. Plenty of fluid should be administered by mouth, and if necessary, by enema or intravenous injection. Lactose or glucose with alkalis may be added to the liquid to advantage. The patient should come to the treatment room with an empty stomach. Morphine administered hypodermically just previously lessens the tendency to nausea and vomiting and quiets the patient during the tedious and often uncomfortable treatment.

Before beginning the radiation a definite plan should be worked out so that all parts of the lesion may be given the desired amount through the most suitable ports of entry. Charts prepared by Desautel and by Holfelder present the best available means of planning the fields and the percentage of the skin erythema dose to be administered through each one. The principles of carcinoma or sarcoma doses as laid down by Seitz and Wintz are considered by the author as the best basis of procedure. The object of attack is to deliver to the zone under fire approximately 50 per cent of skin erythema dose for carcinoma, and 70 per cent of the skin dose for sarcoma, this dose to consist of homogeneous radiation equally distributed at one sitting to all the pathologic or suspected tissues. In the author's practice, the dose is seldom delivered in one day, but more often is given within two or three consecutive days, with an added day for the radium application.

As regards the technique of application, Case states that in the treatment of uterine carcinoma four areas are irradiated in addition to the intra-uterine and vaginal radium treatment. The proportion of the skin erythema dose given through each of the four portals of roentgen ray treatment depends upon the distribution of the lesion and the vertical measurements of the pelvis. A filter of mm. of copper is used. If pelvic work, target skin distance of 50 cm. is maintained. For the treatment of breast, neck, jaw and face malignancy, target skin distance of 75 cm. is preferable to shorter distance. With the author's technique it requires 800 ma. mm. tes. working at 500 kv. with 8 ma. through the tube at 50 cm. target skin distance.

In the filter and fields mentioned to produce mild erythema on the skin of the neck. It is important to complete the introduction of the entire dose within the shortest reasonable time. There is little likelihood of accomplishing as much toward the destruction of the disease at any subsequent attack

as at the first one. The techniques employed at Freiburg and at Erlangen are described at some length.

Although the dosage may be checked up by some method of xonometry the individual installation under the peculiar working conditions of each laboratory will become standardized, and chief dependence will be placed on the reproduction of the physical factors (voltage, milliamperage through the tube, time of application, filter, target skin distance, and size of field of entry) rather than upon the electroscopic readings.

As regards the protection of the patient, Case states that the tube enclosure is not considered sufficient. The patient is covered with protective material except for the opening through which he is being treated. Lead or lead rubber is used and is grounded.

Among the immediate effects of treatment, nausea and vomiting were frequently noted. When glands of the neck, axilla, or groin were treated, swelling and reddening of the area promptly followed, but the swelling disappeared in from twelve to twenty-four hours. In general, primary bluish or reddening of the skin was noted which lasted one or two days and was followed in week or ten days by the deeper reddening of the erythema dose. The reddening gradually faded and was subsequently replaced by brown discoloration of the skin. Following intense radiation of the chest or neck, patients frequently complained of temporary dysphagia, dyspnea, dry cough, disturbance of the voice at times approaching phony, pharyngeal irritation simulating pharyngitis or tonsillitis, and oedematous reddening of the uvula, pillars, and pharynx, but these conditions usually passed away in four to ten days.

The author has not observed any permanent deleterious effect upon the blood count resulting from the massive doses. Only slight temporary changes in the red and white counts were noted. In limited number of observations the blood sugar was moderately lowered and the blood nitrogen slightly elevated. No marked constant change in the coagulability of the blood was observed. The diminished blood sugar can be explained easily by the lessened alimentary intake during and immediately following the treatment.

Rectal and bladder tenesmus were fairly constant sequelae of pelvic irradiation in massive doses. The daily bowel movements began to increase in number about the third day, reaching ten to fifteen in twenty-four hours by the eighth or ninth day and then gradually returning to normal at about the same rate.

Roentgen intoxication is one of the less serious complications of the newer deep therapy, though it stands out as one of the most disturbing to the patient. Headach, nausea, vomiting, and weakness are fairly common but fortunately are transient, usually disappearing within forty-eight hours.

When repeated treatments are indicated they should be separated by an interval of from six to

1 to 4 weeks. In no instance were more than three primary applications given. In several of the cases a herpetiform skin eruption followed the treatment, but a week or two without damage. The skin was noted in any instance.

The immediate effect upon the disease has been very encouraging. In a series of consecutive cases (excluding those in which cachexia was present) the occurrence of prompt improvement (relief) is increased. Pain was usually relieved, bloody and purulent discharges were decreased or disappeared, and the general condition was improved. While some cases responded no better than before it is generally agreed that palliation is more promptly and in a larger percentage. Few of the visible evidences of the disease disappeared. German roentgenologists who have been giving this treatment for four or five years, have a small series of patients now alive three years after such treatment given, with what they considered nearly ideal improvement.

In conclusion the author states that the report of clinical results by European roentgenologists should be accepted with considerable reserve, but the enormous fund of information concerning the physical and biological basis of deep therapy furnished by them and by American investigators, which will permit most intelligent use of the shorter or length roentgen radiation, should be gratefully accepted. A definite advance has been made in deep radiotherapy. Unprecedented good results of short temporary duration, being obtained more constantly in a larger percentage of cases. Radium therapy will be more than ever successful in gynecological malignancy when combined with the intelligent application of the new more penetrating roentgen rays, which by their adaptability to conversion into practically homogeneous radiation will supplement the internal use of radium to reach the lymphatic basins along which extension of the malignancy disease occurs. (Author's Name) 31 D

Martha, C. I. and Uhler, C. Roentgenotherapy of the Intracranial Abscess Following Spinal Air Injections. *Am. J. Roentgenol.* 9 342

As more accurate methods for the diagnosis of intracranial abscess are gradually developed, it is reasonable to provide air should be given. The injection of air into the subarachnoid space and intracranial abscess is described by Dandy after successful results. The authors had the opportunity to examine fourteen cases in this manner during the past year. On the whole, the results have been very satisfactory and they have had no mishaps.

The technique used essentially that recommended by Dandy. The examination causes discomfort, but the information obtained often far outweighs the importance of the symptoms produced. Headache followed each injection. At times it was quite severe but it always disappeared within twenty-four hours. In one case pain developed

in the back or in a leg during the injection, possibly because very filament became caught in the needle. This pain also, as usually transient. Eight of the patients remained in the hospital for twenty-four hours or longer and their pulse and temperature were charted. A visible rise of temperature as noted which probably had some relation to disturbance in pressure on the heat center. The temperature was made to find the absorption of the injected air, except in one case. In this instance, an amount remained in the lateral ventricle at the end of six days, but none of the other injected structures could be made out.

The most important contraindication to the method is brain tumor in the posterior fossa. When there is any question regarding the presence of such condition, ventricular puncture should be done first through a small trephine opening. The equal use of the pincers on the two sides of the medulla. Infection and hemorrhagic conditions have also been mentioned as contraindications. The method appears to be of the greatest value in the study of cases of hydrocephalus in which it is of importance definitely to locate the point of obstruction.

To facilitate the study of the details of the intracranial passages a description of the cerebrospinal fluid circulation is given and several recent diagrams of normal brain are discussed. If an obstruction occurs in one of the narrow passages, it is in the quadrigeminal cistern or the foramina of Luschka and Magendie. Distention of the third and lateral ventricles results from back pressure. This condition is called internal hydrocephalus. If the obstruction occurs in the basilar cisterns or the branches of the cerebral sulci as often happens following meningitis, distention of all the ventricles is apt to occur, a condition designated as communicating hydrocephalus.

It is Dandy's opinion that normal sulci are 3 to 6 R and that the absence of such filling indicates blocking of either the basilar cistern or the sulci themselves. In thirteen series of fourteen cases the sulci were filled only four times. In most of the cases, the trunk pressure normal in most of the cases in which the air did not fill the hydrocephalus, as probably meant they do not feel therefore that failure of the sulci filling indicates blocking of these structures.

Yes, it is in the ventricles, especially the lateral ventricles. The results of these are cited briefly together with their roentgenograms. One case that of a child of 3 years was considered one of hydrocephalus of the communicating type. It seemed probable that there was a blocking in the basilar cisterns possibly due to meningitis. Case No. 1, which case that of a man of 5 years. The conclusion is probably the result of meningitis causing occlusion of a large number of sulci. In the third case, clinical diagnosis of medullary tumor, probably lying in the quadrigeminal bodies, as made. The

roentgenogram suggested an obstruction in the aqueduct of Sylvius.

In conclusion the following summary is appended:

Injection of the subarachnoid space with air appears to be a relatively safe procedure when the cases are properly selected. The after effects of the injection are not serious. The proper interpretation of roentgenograms of the skull made following such injections should aid materially in improving the mortality statistics of brain surgery.

ABRAHAM HARTMAN, M.D.

Bamper, C. M. The Ultraviolet and X-Ray as Physiological Complement in Therapeutics. A Newly Established Clinical Treatment. *Am J Roentgenol* 9 12, 570.

About three years ago the author began clinical experimentation with a view to increasing skin tolerance to the X-ray and finding some method to prevent or overcome the undesirable sequelae of mass skin dosage. Proof as to how ultraviolet light antidotes some of these effects or may operate in breaking up the cycle of changes following mass skin dosage could be given only clinically even if our knowledge of the action of the actinic rays were any much more exact.

By means of rapidly repeated erythema doses of the actinic rays, an area of skin may soon be brought to such a condition that about fifty times the original dermatitis dose of this ray will be necessary to produce even the mildest erythema. This increased tolerance of the skin is not confined to the action of the actinic rays alone but includes also to lesser degree the roentgen ray. Whether this is due solely to the tanning produced or to a decrease in irritability due to the repeated inflammatory reactions or whether the blood chemistry changes following the application of the ultra violet light has an antidotal or damping effect upon the cycle of tissue changes set up by mass roentgen ray dosage cannot be stated. Clinical evidence seems to show that all three factors have part. Surface treated gradually by exposure to sunlight or oak applications of the actinic rays not causing noticeable erythema show a slight increased tolerance to roentgen ray dosage but this increase resembles less that used by repeated erythema rapidly produced by the quartz mercury burn. Increased tolerance does not follow whether the surface is or not but persists as long as the surface is kept dry.

The conjoint use of the ultra violet and the roentgen ray as suggested by the author by comparative study of their local and general effects and by the case of the high beginning roentgen ray dermatitis could be cut short clinically at least, and put upon a more rational basis. Although he is cautioned by prominent oestrogen therapists against superimposing an actinic erythema upon skin that has already received dermatitis dose of the roentgen ray, he has been doing it for number of years without causing any deep tanning or symptoms which would indicate that dermatitis had

occurred, and has greatly exceeded dosages which before the use of this method produced dermatitis regularly. These well merited cautions, however, caused him to treat a few hopeless cases first and wait for months before increasing the dosage proved safe in those cases.

The technique consists in preparing the skin area to be treated by the roentgen ray by a series of actinic ray erythemas produced in rapid succession and repeated until heavy tanning takes place or in case the subject does not tan sufficiently, four or six general ultra violet radiations (not necessarily so severe, but as strong as comfort will allow) being given at the same time for their constitutional effect. When it is decided that the area is prepared sufficient, the last actinic erythema is allowed to fade out and the roentgen ray treatment then given. On the same day but after the roentgen ray treatment, at least as much ultra violet radiation is applied to the area treated with the roentgen rays as was given to the last previous ultra violet treatment. The general ultra violet exposures are also kept up. The application of the ultra violet rays is repeated in the same or slightly increased dosage over the roentgen treated area about every fifth night or seventy to eighty hours radiated by the actinic reaction until that area has had at least three good actinic exposures. Then all actinic erythemas are allowed to fade out so that if a centige erythema appears later it can be detected. In practice, small central areas are covered by the three actinic treatments and the ultra violet ray applications are applied to all the rest of the area for a period of three weeks the small covered area being used as control for the centige ray erythema.

Several cases are cited in detail in which the treatment described was used with good effect. Many doses, excess of ordinary erythema doses were given without the production of any erythema.

In conclusion the author states that the chief purpose of this clinical research was to point out that ultra violet and roentgen radiations are physiological complements. The one may be used in any amount with the other. That is the ultra violet ray applied first renders the skin more resistant to subsequent radiation with the roentgen. The roentgen ray applied first may produce a dermatological damage injurious to the organism but this if it is of that type may be alleviated or entirely neutralized by applying ultra violet radiation secondarily. The ultra violet ray therefore greatly extends the previous limits of roentgen ray therapy in the treatment of disease. ABRAHAM HARTMAN, M.D.

Pendergast, F. P., Hayman, J. M., J. H. Houser, L. M. and Rambo, V. C. The Effect of Radiation on the Normal Tissues of the Brain and Spinal Cord of Dogs, and Its Therapeutic Application. *Am J Roentgenol* 93 12, 551.

The authors describe at some length the experimental work done by others to determine the effect

of radium upon the tissues of the central nervous system. The report also their own experiment upon dogs in which they used both surface applications and implantation and noted the clinical symptoms, gross effects, and microscopic pictures produced by various doses applied to the brain and spinal cord. Consideration is given to the general effects of radium, the manifest toxemia, and finally to certain findings which may throw light on the nature of the general effects observed.

The results of their experiments are summarized as follows:

1. A exposure of the normal brain tissue up to 1,500 mgm hrs is compatible with life (surface application).

2. The result on the cord however could indicate that vitiation of the brain as well as of the cord should never be exposed to surface application or implantation.

3. Microscopic studies indicate that considerable change is to be found. With exposures that cause no clinical symptoms.

4. After exposure of 1,000 mgm hrs the brain shows a general swelling throughout the entire radiated hemisphere. This may be ascribed to the production of an edema which is not limited to the radiated area, but extends throughout the entire hemisphere.

5. Radiation of the brain with radium (surface application and implantation) may cause severe general symptoms which indicate that a powerful toxin has been formed from the radiated tissue.

6. The effect of radium is due to its toxic action on first upon the nucleus and cytoplasm of the cell and the resultant death of the cell under conditions forming a toxin. The direction of this

toxicity is determined by the chief component of the radiated cells. If this is protein, the toxic products of proteolysis may exhibit their general effect. If the chief component is lipid compounds, the result is a toxicity may free the toxic components of lecithin and produce their characteristic reactions.

7. The use of radium is recommended for the treatment of brain tumors but should be undertaken only by one who is thoroughly familiar with the dangers that may result from its improper use.

8. The findings of the experiment on dogs are applicable to human beings since it is not the destruction of brain tissue that causes death, but some toxemia. In the application of radium to the treatment of malignant tumors of the brain of man the normal brain tissue should not receive more than 1,500 mgm hrs.

In conclusion the authors state that radium is to be recommended as prophylactic against recurrence following the removal of brain tumor and after sella decompression and as an agent in the treatment of cases of recurrent neural disturbances following sell decompression. In cases of inoperable tumors it gives good results when implanted into the growth and supplemented by cross-fire radiation through the scalp (external application). When a brain tumor is only partially removed, it should be implanted in the center of the cavity and supplemented by external cross-fire radiation. When

brain tumor cannot be localized or discovered by operation radium may be used for external cross-fire radiation. The treatment of spinal cord tumors should be restricted to cross-fire radiation by the roentgen ray or radium. In surface application there is great danger of causing paralysis.

Samuel H. Kerr, M.D.

GYNECOLOGY

INTERUS

Arnold C. G. Uterine Prolapse with Associated
Fibric Refraction. Kentucky M J 92 22, 593

The tendons in mobile equilibrium between the bladder and the rectum the cervix being about 1 in from the union of the second and third sacral vertebra directed forward toward the symphysis with its axis at about right angles to the vagina. The ligament are usually lax and merely limit the range of mobility.

7. correct tense prolapse fix the upper end of the vagina and the cervix in the proper position, hold the fundus forward, and give sufficient perineal support. If a large cystocele is present the interposition operation is best. When there is complete prolapse the vaginal hysterectomy of C. H. Mayo with overlapping of the ligaments beneath the bladder and a high perineorrhaphy is indicated.

R. F. CROFT, M.D.

Vogl. The Significance of Aneurysms of the Uterine Vessels As Indicated by an Arteriovenous Aneurysm of the Uterine Artery and Vein Due to an Aerial Bomb Injury (Ueber die Bedeutung des Aneurysmus der Uterinegefäße nach der Bruchverletzung eines Arteriovenösen Aneurysms der Arteria und Vena uterina infolge einer Bombenverletzung) Arch f Gynäk o. Gyn, 75

Absorption of the pelvic vessel re very rare d
 no % of neovasc of the terine vessels has been
 reported in the literat re In the thor case
 swelling large as a hen egg as palpable to
 the left of the uterus It median portion pulsated
 synchronously th the heart beat and caused bulg
 ing of the anterior vaginal wall The lateral por
 tion high extended up the pelvic wall showed no
 pulsation Following compression both portions
 of the tumor soon refilled friction and a hum
 the t more are noted on palpation d auscultation
 and the same heart and bil the f moral ad
 common dia stolic up t the ost Complica
 tions t be f red mor se in size of the
 between compression and reason of dy cent
 part (part ul th later) lision rupture of
 the ovum th res lant ves hemorrhagic
 malignancy degeneration of l lent infection ad
 embolism

A propi but dose of tetra 11 11 11 11 11
 preio t the l rotom The operation which
 do unde mbur esthesia inserted in
 re of the left uret throughout its entire
 f k course location of the tensor nter lose
 t t den t i for th k pognate artery 11 11
 t up two I drain ge of the cul-de-sac of
 through the gi The centropogram

of the specimen revealed a fragment of the bomb in the uterus and another in the immediate vicinity of the aneurism. The latter had particularly sharp edges.

The author states that evidently the bomb fragment entered the pelvis through the greater sciatic foramen. Following adhesion of the esach injured by its passage the intima grew over the wound. Intimate connection between the artery and vein being thus formed.

In the differential diagnosis hematoma of the broad ligament, palpable pulsation of the uterine artery in retro uterine hematocoele and cysts of Gartner's ducts with apparent pulsation must be taken into consideration. GRAGERT (Z)

Potik, J. O., Mittell, E. A. and McGrath, A. B.
What Is the Relation of Hypertension to Fibroid Disease of the Uterus? *Am J Obst & Gynec*

The authors reach the following conclusions on the basis of 416 cases:

The presence of fibroids of the uterus in young women causes no apparent effect on the blood pressure.

Women with myomata who have a high pressure are usually over 40 years old near the time of the climacteric, or have renal or cardiovascular disease.

3. The bleeding of fibroid seems to be salutary and has no direct effect on the blood pressure but when it is suddenly checked by operation or radium the pressure rises temporarily.

4. In women 44 years or over the pressure is raised for a long period following removal of the uterus and ovaries, but unless there is some intercurrent disease it soon returns to the pre-operative level.

5 When the ovary or ovaries are preserved the operative climacteric is less stormy.

6 The pressure and nervous phenomena are more pronounced after radium treatment than after operation.

L. L. COMPTON, M.D.

von Ottenberg H. The Indication for Total
Ablation in Certain Cases of Rupture of the
Uterus (Ueber die Indikation zur Totalersterpation
bei Uterusruptur in besonderen Fällen) Zentralbl
f Gynäk 9 11 70

A sextipura in the fifth month of pregnancy noticed discharge of amniotic fluid without external cause. A few days later a midwife introduced her hand to remove the dead child. With the exercise of considerable force he finally delivered the trunk & limbs of the foetus. The head and placenta she was unable to find.

At examination at the bougit the external os could be penetrated with finger bougit can above the os on the right side large round cavity as found. The uterus empty like the U of a man's fist and soft.

Laparotomy performed at once revealed on the right side near the uterus a tumor like bulging of the broad ligament. The peritoneum a intact. Total ablation was done the head of the fetus and the placenta are found between the folds of the broad ligament. Drainage as set blinded through the gynaik surface of the ovid covered with peritoneum, and the incision sutured. Death occurred from cardiac embolus four days after the operation. There no action of the b dominica.

Total ablation of the uterus is indicated not only when there has been rupture of the peritoneum but also when there are irregularities in the broad ligament with severe hemorrhage and expulsion of the terine content. *WOMAN 11 112*

T. Fibroid Irradiation and Excision of Uterine Fibroids (*Traitement des fibromes irradiation and excision*) *Bull. et d. med. Par.* 1931 599

In T. fibroid operation the indications for conservative operation treatment of uterine fibroids (in excision) are more numerous than those for radical treatment. The principal argument for this view is that only 1 per cent of the women with fibroids are at the age of 40 to 50 years of age. In addition could cause sterility and a large number of fibroids are small. Recurrence following excision is rare after irradiation without re-operation and in the menopause action is preserved.

With good technique excision is no more dangerous than hysterectomy. Irradiation of terine myomata should be employed only when there is a hysterectomy could be necessary. *A. J. B.*

Davis, I. The Final Result of the Surgical Treatment of Carcinoma of the Cervix Uteri. *Ann. Surg.* 1931 395

Many surgeons have been somewhat pessimistic about the use of radium in the treatment of the cervix. That this is not the case is shown by the above operation. It is the author's contention that for the present the operation is the most reliable method. The method of choice because it is possible to use of it proven effective and because there have not been sufficient evidence that radium will give lasting cure.

In a report published in 1920 thirty-five cases of radical hysterectomy for carcinoma of the cervix from the records of the Massachusetts General Hospital the mortality as given as 6 per cent and the five year cure as 57 per cent.

The author reports that additional cases in which radical hysterectomy as done. These cases

were chosen from eighty-five cases of carcinoma of the cervix examined. The operability was therefore 37.6 per cent. Twenty of these cases were operated upon prior to 1917 and twenty more then. The mortality 9.3 per cent. The five year cure as 40 per cent.

The radical operation consisted of wide removal of parametrial tissue and liberal cuff of vaginal all in some cases en bloc and cauterization were done in 23 previous.

Cases presenting contraindications to operation are those showing infiltration of the rectal or vaginal all in some cases en bloc and cauterization were done in 23 previous.

The most frequent complication in the cases reported as urinary fistula.

The thirty-two cases which were operated upon prior to 1917 are reported in detail.

I. J. BRADSHAW, M.D.

Wells, J. V. A Study of Adenocarcinoma of the Fundus of the Uterus. *Am. J. Obst. & Gynec.* 1931 24

This article is based upon study of forty-four cases of adenocarcinoma of the fundus of the uterus operated upon at the Free Hospital for Women in Brookline, Massachusetts since 1903.

The uterus as a gland in many cases but this is not constant finding. The average age of the patient as 50 years. In 15 per cent had had children the average number being three. The average duration of symptoms on average eight months. Therefore if more emphasis were laid upon the significance of irregular bleeding the number of cases in which treatment is successful would be greater.

Judging from the statistics the diagnosis of adenocarcinoma of the fundus is difficult without microscopic study. Atresia of the cervix may be easily confused with it.

Seventy-two and 61 per cent of the cases studied are without recurrence at 1 to 4 years or more after the operation. Fourteen of the cases recurred but 100 per cent and 93, and thirty per cent and 9 per cent more of the cases.

Adenocarcinoma of the fundus is not common tumor in hospital practice. There is only one but forty-four are in 566 operated upon since 1903, but in private practice it is undoubtedly more frequent.

Complete hysterectomy (not Wertheim's method) is the most successful treatment. Operation is to be performed if radium therapy.

Five of the forty-four patients studied had metastatic growths in the adnexa. Therefore bilateral oophorectomy should be performed with the removal of the uterus.

The differential diagnosis from gland hypertrophy is sometimes difficult even with the microscope.

E. L. COVERT, M.D.

ADNEXAL AND PERI UTERINE CONDITIONS

Dorland, W A N. A Clinical and Embryological Report of an Extremely Early Tubal Pregnancy, Together with Study of Decidual Reaction, Intra Uterine and Ectopic. *Am J Obst & Gynec* 9 iv 5

The case reported is of interest because

It is the earliest tubal pregnancy recorded the embryo measuring only 1.55 mm. or when the dorsal flexure was straightened 1.8 mm. and showing but 5 somites

The fallopian tube showed no sign of decidual tissue

3. A sharp dorsal flexure in the outline of the embryo closely corresponded to that noted in Wilson's embryo. This is not a natural condition and was produced probably by the contracted position of the ovum in the tube

4. The optic vesicles were in contact with the overlying ectoderm

5. The optic vesicle was shown in very early stage of development. E L CORLIET, M D

Donald, A. Adenomyomas of the Rectovaginal Space and Its Association with Ovarian Tumors Containing Turry Material. *J Obst & Gynec Brit Emp* 9 xii 447

The author has had a series of seven cases of adenomyomas associated with cystic ovarian tumors containing turry or chocolate material. The tumors were not ordinary varicose tumors with codential hemorrhage but distinct entities. Such growths are nearly always bilateral and very adherent. Frequently they must be dug out of the broad ligament or the side and back of the pelvic cavity. They burrow into the tissues. The lining wall is often quite thick and rather leathery. The author regards these tumors as adenomyomata but states that their exact origin is still unknown.

Seven of Donald's patients were between 4 and 47 years of age. Nine were married and one was single. The one symptom which was present in every case was dysmenorrhea. In three cases complaint was made of dyspareunia. In six cases a definite, hard, tender mass was felt through the posterior fornix. In a majority of the cases pain hysterectomy as done. H W FINE, M D

Sampson, J A. I. Intestinal Adenomyomata of the Endometrial Type. Their Importance and Their Relation to Ovarian Hematomata of the Endometrial Type (Perforating Hemorrhagic Cysts of the Ovary). *Arch Surg* 9 7

The adenomata of endothelial type occurring in the intestines are similar to those found in the ovary tube, or teros. The parts of the intestines usually involved are the sigmoid, rectum, appendix, and terminal loop of the ileum.

The lesions are (1) surface and superficial implantations, (2) implantations developing between adherent folds of the peritoneum, and (3) deep invasion of the underlying structures.

Often they do not produce any symptoms. In other cases they cause obstruction.

The treatment is removal of the ovaries. The intestinal lesions should be removed only when they cause obstruction.

The condition is usually found during the latter half of the menstrual life of women, usually after the thirtieth year of age, and occurs in more than half the cases of ovarian adenoma of the endometrial type. The author gives thirteen histories of twelve cases. R E CHAMBERLAIN, M D

Shaw, W F. and Addis, W R. Adenomyoma of the Rectogenital Space Associated with Turry Cysts Arising in Islands of Adenomyomatous Tissue in the Ovary. *J Obst & Gynec Brit Emp* 9 xii 45

The authors report the sixth of a series of cases of adenomyoma of the rectogenital space associated with turry cysts of the ovary. That these cysts originate in adenomyomatous tissue in the ovary had been contended for long time on clinical grounds but it remained for Cullen and Sampson to show microscopically that they contain in their walls islands of endometrial tissue.

The case reported was that of a married woman 38 years of age who had had no children. The chief complaint was dysmenorrhea of one year's duration. Examination revealed a firmly fixed irregular tumor apparently arising from the uterus which filled the pelvis and extended up into the abdominal cavity to about four fingerbreadths above the pubes. At operation the growth was found to consist of masses of fibroids in the uterine wall. The right ovary was above the pelvic brim and adherent to the bowel. The left ovary was buried in adhesions obliterating the pouch of Douglas.

Removal of the appendages and uterus was extremely difficult. The fibroids formed an irregular globular mass the size of a turnip. The left ovary was the size of a tangerine orange.

On section, the ovarian substance was found to be replaced almost entirely by a series of thick-walled cysts containing dark chocolate-colored fluid of turry consistency. The left tube was normal. The right ovary which was smaller consisted of a mass of cysts with contents similar to the material in the left ovary. The right tube was normal. Microscopic examination of tissue taken from the cysts all showed distinctly structures comparable

to adenomyomatous tissue, including smooth muscle and gland spaces lined with cubical endothelium indistinguishable from endometrium.

H W FINE, M D

Probstner, A. Results of the Surgical Treatment of Long-Standing Tumors of the Adnexa (Heilresulte der chirurgisch behandelten chronischen Adnexitiden). *Gyn. heb. 9* lxxvi, 5

Operative treatment is justified only in cases in which the tumor has been present for years, has resisted all conservative treatment, and causes

severe symptoms or incapacity for work. In any case operation should not be performed until several months after the disappearance of inflammation.

The operation is usually radical, with total removal of the uterus. A conservative operation is performed only in unilateral (postperineal) cases. In 11 cases operated on radically during the past five years there were five deaths, 1 from peritonitis, two from sepsis and one from embolism. Of the patients who survived, 95 per cent were able to work and 8 per cent were entirely free from symptoms (fifty nine of sixty seven examined subsequently). In twenty-eight cases operated on conservatively there were no deaths, and of the seventeen women subsequently examined, eleven (70 per cent) were cured, three (6 per cent) were better but not entirely well, and four were no better.

The results of the conservative procedure are thus seen to be less favorable than those of the radical operation, even when the cases are carefully selected. The only disadvantage of the radical treatment is that it produces an artificial menopause but the symptoms of this condition are noted chiefly in nervous women and are never so severe as to seriously diminish the good results of the operation.

Pol. (7)

EXTERNAL GENITALIA

Lagoutt, The Formation of Artificial Vagina by the Transplantation of Loop of Intestine (Création d'un agneau artificiel par anastomose d'une anse intestinale). *Lyon & Surg.* 9: 21, 415.

In 11 cases of bicornue of the vagina Lagoutt operated successfully by Bald's method, viz the transplantation of a loop of the small intestine. A transverse incision was made, the depression corresponding to the vulva medially laparotomized then done and loop of the small intestine exteriorized, a distance of about 20 cm from the ileocecal valve. About 5 cm of this loop was then resected and the end of the gut were anastomosed. The mesentery was included in the resection. The rudimentary uterus and ovaries were removed and the two broad ligaments united and brought down to the perineum. A canal was then hollowed out for the new vagina and the testis loop brought down to the perineum and fixed in place by returning the mesentery. Thus having been done the loop opened and returned to the remnant of the vaginal mucosa.

A satisfactory result was obtained in all twelve. There was no secretion of mucus from the transplanted loop. W. A. Biss.

Garner, U. A New Method for the Surgical Treatment of Congenital Vaginal Anoma (Nouveau procédé de traitement chirurgical des anomalies congénitales). *U. Ital. di chir.* 9: 472.

A rectal outlet in the female genital tract is either rare congenital deformity and the occurrence of the outlet in the vagina is particularly rare.

The usual method of treating both vulvo-rectal and a guorectal fistula consists in dissecting the rectum and fixing it to a new anus. When the rectal outlet is situated deep in the vagina however this operation is extremely difficult.

In a case operated upon by the author that of a child 3 years old, the rectal aperture in the vagina had destroyed a part of the posterior vaginal wall and caused marked vaginal fresta. As the ordinary operative methods were not applicable, Camera decided to perform a plastic operation on the posterior wall. An disc anus was first formed. When this was functioning well, a posterior median incision was made extending from the middle part of the sacrum to the ischiatric line, and the rectum isolated and resected. The lower extremity of the rectum was then easily found in the posterior vagina. There was no muscle structure corresponding to an external sphincter but the levator ani was inserted at the head of the rectal cul-de-sac. The rectal communication with the vagina was explored through a longitudinal cut in the intestine and the rectum then cut away passed through the fens of the levator ani to the sacroperineal incision, and sutured to the skin.

There was some postoperative perineal suppuration but the new anus was definitely formed by the fourth day and evacuations occurred daily.

W. A. Biss.

MISCELLANEOUS

Bird, F. D. Note on Form of Pelvic Hydatid Cyst and Its Treatment. *Med. J. & Surg.* 10: 2, 279.

The author reports his treatment of three cases of pelvic echinococcus cyst involving the prostate. Through suprapubic incision the cyst cavity was emptied by means of an aspirator, gently irrigated, and drained. The after treatment consisted of relieving the pain and keeping the drain tube open until its removal. C. H. Davis, M.D.

Young, J. V. Intermittent Aspiratory Hyperemia. I. Gynecology. *Am. J. Med. & Surg.* 9: 40.

When the lesion to be treated is an infection of the cervical glands alone the instrument described by the author may be used as suction pump only but as most cases there is ascending lymphangitis with peritonitis, aspiratory stimulation is of great importance.

Intercutaneous or both aspiratory stimulation is of the greatest value. A method of cleansing the cervix and preparing it for topical applications is almost serviceable. When the infected glands have become cystic they may be punctured and pumped empty and the cavity filled with blood clot.

Of 78 cases (76 those of cellulitis and those of mallepox) 97 were cured, forty seven are benefited, and twenty four not benefited.

There can be no doubt that cervical infection is much more frequent and much more important as a focal infection and point of entry that is generally believed.

Intermittent aspiratory hyperæmia is a method by which infected cervical glands may be drained and a temporary hyperæmia induced to eliminate the infection. Hyperæmia will also stimulate the uterine muscle to rhythmical contraction, thereby improving the uterine tone and relieving circulatory stasis and inflammatory conditions.

E. L. CORNELL, M.D.

Albertin. The "Douglas Cry" in Women (Le "cry du Douglas" chez la femme). *Lyon chirurgical* 9, xiv, 479.

Nearly twenty years, when carrying out a laparotomy in women, Albertin observed that when the fundus of the Douglas cul de sac was wiped a pharyngolaryngeal reflex caused the patient to utter a sharp and prolonged cry. On repetition, the manoeuvre always gave the same result. Albertin calls the sound the Douglas cry. He has found that great many other surgeons have observed the same phenomenon. Albertin now reports it as recently he has tried the work of Latarjet on the innervation of the uterus which shows that the Douglas sac has a rich supply of sympathetic nerve filaments. He states that many of the acute vaginal pains of which women complain after a colpotomy or hysterectomy and the pressure pain in the Douglas region are explained by very great sensitiveness of the Douglas sac. The presence of such sensitiveness is very suggestive of ovarian degeneracy.

In discussing Albertin's paper Tixer said that the Douglas cry can be produced also in men. It has caused it by prostatic dilatation even under deep anesthesia. The cry is a danger signal. Cases are known of severe and even fatal anæsthetic syncope in ectal dilatation, and it is possible that there is some relationship between the Douglas sac reflex and this serious complication.

W. A. BRYMAN.

Nagelsbach. Malignant Chorionic Epithelioma with Hæmorrhage into the Abdominal Cavity (Malignes Chorionepitheliom mit Verblutung in die Bauchhöhle). *M. caschen und H. k. w. b. s.* 9, 5, 5.

The author reports the case of a woman who suddenly collapsed with symptoms pointing to tubal rupture. A year previously she had been cured on account of a miscarriage.

Immediate laparotomy revealed, in addition to a large quantity of free blood in the abdominal cavity, somewhat enlarged uterus with a small area of bloody tissue without serous covering on its anterior wall. Supravaginal amputation of the uterus was done. Death occurred a few hours later in spite of the transfusion of blood and the usual restorative methods.

This was a case of intramural chorionic epithelioma which originated in the pregnancy of the previous year and caused perforation. DROGOS (Z).

Macomber D. The Etiology of Sterility in the Female, from an Analysis of 544 Case Records. *Boston M. & S. J.* 9, cxxxvii, 307.

As many of the 500 records were incomplete and in many of the cases the sterility was due to the male, this article is based on the findings in 337 cases. The conditions responsible are given as follows:

PATHOLOGIC CLASSIFICATION OF FEMALE STERILITY

	Per cent
Closed tubes	9
Tuberculous tubes	4
Endocervicitis	5
Endometritis	—
Total cases due to inflammation	30
Retroversion	—
Fibroids and miscellaneous	8
Simple congestion	—
Total cases due to congestion	3
Anteflexion	0
Double uterus, et	—
Infertile uterus	4
Total cases due to developmental errors	24
Asthenia and ovaries	8
Retroversion and ovaries	3
Ovaries alone	8
Age, diet, menopause	4
Total cases due to ovarian conditions	5

Sterility may be due to either the male or the female, the incidence of the condition being the same in both sexes. When the female is responsible the chances are about even that the cause is pathologic on the one hand or developmental or functional on the other. About one fourth of the women studied had closed tubes or some other inflammatory condition. One fourth the sterility was due to congestion. In another fourth the cause was essentially developmental, and in another failure of ovulation. In sterility due primarily to disturbances of function the treatment of pathologic lesions alone will seldom be successful.

E. L. CORNELL, M.D.

Pomeroy L. A., and Milward, F. W. A Case of Primary Carcinoma of the Female Urethra Treated with Radium. *Swiss Grenz & Obst.* 9, 2, xxxv 355.

The authors report this case because of the great rarity of the condition. The fact is emphasized that a caruncle had been present for several years before the development of the malignancy. At the time of examination a large foul ulcerating mass was found filling the entire introitus and extending about 3 cm. up and along the posterior wall of the urethra. The patient still retained urethral control. A tentative clinical diagnosis of primary carcinoma of the urethra was made and a small section of tissue removed for pathologic examination. The pathol-

ologist's diagnosis: a probable carcinoma which had undergone circumscribed proliferation.

Although no definite evidence of lymphatic involvement could be made out it was thought best, because of the patient's advanced age and the extent of the lesion, to apply radium rather than to risk the shock of more or less extensive operation. Five steel needles each containing 1 mgm. of radium element were inserted directly into the tumor at about equal distances from each other and allowed to remain in position for 48 hours. In addition, one tube containing 30 mgm. of radium element screened with 5 mm. of silver or 1 mm. of brass and 1 mm. of hard rubber was inserted into the urethral canal and allowed to remain for four hours. The total radium treatment therefore equaled 800 mgm. hrs.

The patient had only the usual postoperative and radium reaction and two days after the treatment was up and about without any unusual symptoms. Twelve days after the treatment she had suffered no temperature or other symptoms and urination

showed that the mass was one third less in size and much cleaner and that the discharge was considerably reduced.

The authors' conclusions are summarized as follows:

Primary carcinoma of the female urethra is rare disease; only sixty-eight cases have been reported in the literature.

Urethral carcinoma, a relatively common affection in women may be followed by malignant degeneration; hence the importance of its early recognition and treatment.

3. Urethral cancer should be recognized early and given rigorous treatment.

4. In the early cases the treatment should consist of radical extirpation. If enucleation of the bladder may be indicated but this is rarely necessary. In most cases the external sphincter can be saved in the operative procedure.

5. Radium should be used after all operations, and in advanced cases may be employed alone.

ANASTAS II STENC M.D.

GENITO URINARY SURGERY

ADRENAL, KIDNEY AND URETER

Brasch, W. F., and Scholl, A. J. Jr. Pathological Complications with Duplication of the Renal Pelvis and Ureter (Double Kidney). *Surg. Gynec. & Obst.* 9: 225, 4

A review of the records of 144 patients observed at the May Clinic since 1907 in whom duplication of the pelvis and ureter was found revealed that 35 (24 percent) had unilateral duplication and one (6 per cent) had bilateral duplication. In forty-four cases the duplication was complete in 100 cases, incomplete.

There is usually a difference in the size of the pelvis of double kidney; the upper pelvis being the smaller. In spite of this, the function of the two segments is usually equal. Microscopically the tissue between the two segments is demonstrated to be a complete histologic unity. In some cases the capsule dips into the renal mass making a definite partial division. In the specimens examined glomeruli and renal tubules were almost always found in the parenchyma between the two pelvises.

The diagnosis of complete duplication is comparatively easy by cystoscopic examination. In incomplete duplication, however, the condition is discovered only by means of a routine pyeloureterogram. The cystoscopist should always be on the look out for the third opening. When three ureters are present the usual method of catheterization by removing the cystoscope and re-introducing it is awkward and painful. The authors have devised a three-way catheterizing guide which overcomes this. It is difficult to estimate the definite function of each of the two segments, particularly if one is diseased. Unless good function can be demonstrated in one segment a heminephrectomy is out of the question. Pyelography is of value in determining the distance separating the two pelvises as well as the pathologic condition present. The distinction between the small pelvis of trophic pyelonephritis and the upper pelvis seen in duplication may be difficult because of pathologic complications.

The series of 44 patients are divided into four groups: (1) thirty patients in whom pathologic complications have been operated on; (2) ten patients in whom definite pathologic complications were found but on whom operation was not performed; (3) twenty-nine patients in whom there was doubtful evidence of pathologic lesion; and (4) sixty-one (4 per cent) patients in whom the diagnosis was purely accidental and no complications were noted.

The most common lesion calling for surgical treatment was hydronephrosis caused by stricture of the ureter. Of the 21 double kidney removed for

tuberculosis the disease primarily involved and was largely confined to the lower segment in five. Stricture in the ureter in these cases is often situated at the point of ureteral division.

Surgical treatment was carried out in thirty cases: nephrectomy in fifteen, heminephrectomy (two patients required complete nephrectomy later) in four, pelvicotomy, six, ureterolithotomy in three, cutting of anomalous blood vessels to relieve bydrophrosis in one, and ligation of an aberrant (upper) ureter which opened in the vagina in one.

In most instances the pathologic complications other than hydronephrosis with double kidney require nephrectomy. Complete nephrectomy was subsequently performed in two of four cases of heminephrectomy because of infection in the remaining portion of the kidney. Unless the lesion is confined entirely to one segment and the clinical evidence shows definitely that the remaining segment is or may have sufficient function to warrant the procedure, heminephrectomy should not be attempted. Even under such favorable circumstances the infection may invade the remaining segment, necessitating secondary nephrectomy.

Runeberg, B. Hematogenous Acute Infectious Nephritis and Pyelonephritis (Nephritis, hematogenous, acute, characterised by pyelonephritis). *Acta Med. Scand.* 92: 15, 38

Runeberg reports 50 cases of infection of the urinary tract. At least 50 per cent of the acute cases observed in his clinic are cases of pyelitis or pyelonephritis. The infection occurs through the blood and is often wrongly diagnosed as appendicitis or cholecystitis. In order to determine the pathogenesis of these conditions Runeberg made a histologic examination of a large number of kidneys obtained at nephrectomy or autopsy. He distinguishes two essentially different types of cases.

Group I. Focal glomerulitis. In this condition there is slight epithelial degeneration especially in the convoluted tubules. Multiple foci in the papillary zones and inflammatory areas in the wall of the pelvis and along the renal capsule. The bacteria reach the kidney by way of the blood stream and are then eliminated through the glomeruli producing inflammation. When retained in the canals they form foci of infection. When they spread to the pelvis and cause pyelitis. The pyelitis produced by the lymphatic route disseminated nephritis characterized by infiltrates with milky abscesses. Runeberg calls these conditions luminous nephritis, the pyelitis and secondary pyelonephritis.

Group II. Purulent foci irregularly disseminated in the cortical and medullary substance. Important lesions in the kidney or pelvis are rare. The

bacterial emboli become fixed in the ramifications of the renal vessels, giving rise to abscesses outside the circulatory system of the kidney which by continuation, may cause later or extra renal purulent processes. Koberg calls this condition "aposthetic toxic nephritis" metonymy by the formation of emboli.

In the majority of the cases the infection is due to the bacillus coli or a staphylococcus. A hematogenous colon bacillus infection is always an elimination nephritis. Nephritis pyelitis, and pyelonephritis due to the colon bacillus are only more or less concentrated phases of the same process. The early stage is characterized by fever, light urinary symptoms, andague humber pain. The urine contains large quantity of albumin, and blood is often detected with bacteria in the sediment. When the stage of pyelitis is reached the principal symptom is sharp renal pain and tenderness.

Staphylococcal infections frequently cause local metastatic purulent nephritis by the formation of emboli. The foci are often outside the secretory parts of the kidney. The urine contains white and red cells and bacteria, but no trace of albumin.

Elimination nephritis due to staphylococcal infection resembles colon bacillus nephritis but also differs from it in several points. It occurs more frequently in men than in women. The nephritis period is often short, the condition then assuming cystitis and pyelitis. In nephritis due to the colon bacillus the primary pyelonephritis is often longer than in the staphylococcal infections and the pyelonephritis crises are not so frequent.

The majority of cases of acute infectious hematogenous nephritis and pyelonephritis can be quickly cured by conserving treatment. Operative intervention is not necessary during the acute period unless there is danger of anuria or septicaemia. Koberg strongly advocates the use of urethral retention sound especially in suppurative pyelonephritis with symptoms of retention. In chronic unilateral pyelonephritis and pyelonephrotic nephrectomy is indicated. W. A. Linn-Yav.

Bluhm, J. M. and Smith, A. L. *The Diagnosis and Treatment of Pyelitis. Nebraska State Med J.* 9, 2, 19.

The symptoms and signs of pyelitis and its causative factors are protean and may simulate those of practically any organ in the abdomen. The primary erroneous diagnoses are pyelitis, abnormal conditions of the female organ, the biliary apparatus, or the duodenum and stomach and postoperative adhesions.

The common causes of pyelitis are (1) remote infections, (2) constipation, (3) ureteral calculus, (4) pelvic calculus, (5) infection and associated abnormalities lower in the genito-urinary tract, (6) ureteral angulations, (7) ureteral strictures, (8) nephropexy, and (9) neoplasms of the kidney.

The common complications are (1) hydro-nephrosis, (2) pyonephrosis, (3) pyelonephritis, (4)

perinephritic abscess, (5) destruction of kidney tissue, (6) hydro-ureter and (7) cystitis.

Any bacterium may be the active cause of the infection. The bacillus coli communis is the invading organism in a large percentage of cases.

The diagnosis of pyelitis rests upon the physical, X-ray and cystoscopic findings. The examination should consist of (1) the history and complete physical examination, (2) an X-ray examination of the abdomen, and (3) cystoscopic examination and ureteral catheterization.

The treatment giving the best result consists of (1) eradication of all infectious foci, however remote.

Regulation of the bowels.
(2) Treatment of local associated pathologic conditions.

(3) The administration by mouth of large amounts of water and the changing of the reaction of the urine every ten days.

(4) Catheterization and drainage of the pelvis of the kidney followed by large therapeutic solution and the injection of percent silver nitrate solution one or three times a week.

The authors report three cases to illustrate the value of the methods mentioned.

Case 1. That of a woman 35 years of age who had an appendectomy four years ago for pain and rigidity in the right lower abdomen. The pain had continued intermittently and the patient had been advised that an operation for adhesions was necessary.

Examination of the right kidney revealed pyelitis, calculus in the pelvis and lowered function.

The true cause of the abdominal pain was stone in the pelvis and later another in the ureter. Following the correction of these abnormalities the pain ceased.

Case 2. That of a woman 44 years of age. Pain had been present in the left side of the abdomen for the past six years in spite of five abdominal operations during this period. A surgeon finally decided to remove the left kidney because roentgenologist reported it much enlarged.

The examination made by the authors revealed perfectly normal left kidney but pyonephrotic right kidney. The right ureter showed stricture and an angulation. The function of the right kidney was practically nil. This case shows that pain, tenderness and enlargement are not unusual in normal kidney which must double its excretory function.

Case 3. That of a woman 38 years of age who complained of pain in upper part of the abdomen on the right side, shortness of breath and sharp pain in the heart region. A diagnosis of gall stones had been made by surgeon and operation advised.

A general examination revealed peridental infection and myoeiditis. The urine from the right kidney contained large number of pus cells, trace of albumin, and colon bacilli. The capacity of the pelvis was increased to 35 cc. The normal rhythm of the ureteral flow was absent and function reduced to one third normal. Pyelography showed greatly

dilated pelvis with partial destruction of the secondary calices. A diagnosis of first degree pyonephrosis was made. The offending tooth was extracted, the patient kept in bed until the heart function was normal and the kidney condition treated as outlined.

THEODORE DROGOWITZ, M.D.

Kreutzmann, H. A. R. Studies in Ureteral Catheterization. Preliminary Report. *California State J. M.* 9, 13, 3.

This study was undertaken by the author as an attempt to determine whether or not the present disadvantages of ureteral catheterization could be overcome by inserting the catheters only part way into the ureters.

The patient was subjected to catheterization three times at intervals of one week. On 6 ureteral catheters were used throughout. At the first sitting they were inserted 5 cm into the ureters, the second time 4 cm and the third time the full distance into the kidney pelvis. After the insertion of the catheters 5 cc of phenolsulphonephthalein solution was injected intravenously with Record syringe.

The conclusions drawn are as follows:

In ureteral catheterization the occurrence of pain, hematuria, and anemia increases in direct ratio to the distance the catheters are inserted.

Catheterization as at present performed has frequently depressing action on the kidney function.

Accurate information as to relative kidney function cannot be obtained if the catheters are inserted only a few centimeters into the ureters.

The only constriction of importance in ureteral catheterization is at the junction of the ureter and the bladder.

The passage of medium sized catheter causes passive dilatation of the ureterovesical sphincter which lasts at least one week.

Repeated catheterization causes still greater dilatation of the sphincter with further increase in the amount of leakage. LOUIS GEORGE M.D.

BLADDER, URETHRA, AND PENIS

Geljanitski, J. A New Procedure for the Formation of Sphincter for the Bladder. (*Ein neues Verfahren zur Sphinkterbildung der Harnblase*). *Von Chir. Arch.* 9, 33.

A man 3 years of age with total paraplegia due to a gunshot injury recovered his ability to walk after six months but the incontinence of feces and urine persisted. Two years after the injury he was admitted to the hospital. The deep decubital sores caused by the urine. The bullet which the roentgenogram showed to the left side of the fourth lumbar vertebra, as not found. Laminectomy here upon the following operation was performed.

In the lithotomy position median incision 10 cm long was made from the scrotal inversion to the anus through skin and psoas, and the musculature of the pelvic floor was split transversely and bluntly

dissected further. The bulb was displaced upward, the anus downward and the membranous part of the urethra as isolated and ligature was carried around it. By means of this suture strip 1 cm long was taken from the fascial layer and moved under the urethra, over which the ends were crossed and fastened with interrupted sutures to two strands of muscle obtained from muscles inserted into the tubercle (adductor muscle and biceps). Figure of eight sutures and retention catheter were then inserted.

General anesthesia was pulled daily at the end of three weeks. Two weeks later the patient reported that by putting his thigh muscles under tension in the standing position he could retain his urine for one hour or longer. After two and on half months the function became better and the patient desired similar operation on the rectum.

The author has devised a suitable plan of operation based on the belief that muscle plastic on the gluteus maximus muscle will act mechanically and also innervate the external sphincter.

O. DEAN ORRIS, SACRAMENTO (2)

Scholl, A. J. and Brunsch, W. F. Pre-Operative Treatment of Malignant Tumors of the Bladder by Radium. *Arch. Surg.* 9, 2, 334.

Certain types of tumors of the bladder respond readily to excision, while others offer an extremely poor prognosis. Because of the difficulty of completely eradicating the tumor and its frequent cellular transplants, recurrence is early and extensive. This is particularly true of the solid, meaty epitheliomas which commonly occur in the base of the bladder. Small infiltrating wedges of actively malignant cells which project down through the muscle bundles are often cut across between portions of the bladder is excised. The undisturbed clumps of cells which remain in the normal tissue act as foci, spread rapidly and externally and often soon attain an inoperable size.

Epithelial tumors of the bladder rarely metastasize persons who die from malignancy of the bladder usually succumb because of the local condition. Any procedure which would act in effectually eliminating the local condition would in many cases effect a cure.

Recently the flat infiltrating tumors have been treated with radium emanations prior to operation. Small amounts of radium are used with the idea, not of completely destroying the growth, but of diminishing the capacity of the cells to proliferate. This is done to inhibit early recurrences from segments that removed and to prevent reimplantation of cells freed during the excision of the tumor.

Under sacral anesthesia the direct cystoscope is passed, the distal opening of the instrument placed on the tumor and the cyst piece detached. This allows the water free exit and the contraction of the bladder firmly implants the tumor against the open end of the instrument and holds it in place until the point of the radium needle can be inserted and the tube drawn into the growth. The bladder is then filled with water and a second area of the tumor

located. This procedure is repeated until the bases of radium emanation have been touched throughout the growth about one to every square centimeter of tumor tissue.

Specimens removed from the tumor before radiation are later compared with the tumor removed at operation.

The most striking feature of radiated tumors is an extreme fibrosis which produces an extensive walling off, replacement and destruction of the tumor cell.

In some cases the radium rays undoubtedly destroyed the proliferating powers of the cells completely but in a number of tumors nests of apparently intact malignant cells were found. These cells generally killed off by extreme fibrosis, were sparsely present at the time of operation as a result of the exposure to the radium rays.

The insertion of tubes of radium emanation is a very simple procedure which may be done at the time of the first examination. The small amount of radium rays is slowly discharged and very little reaction is produced. Most tumors of the bladder are superficially placed, thrombosis of the blood vessels develops early and consequently the absorption of necrotic or toxic substances is slight.

During the period between the insertion of the radium emanations and the operation a daily bladder lavage is given which not only removes any necrotic slough but also reduces infection of the bladder which is often present.

Emanation tubes are not satisfactory in malignant papillomata as the loose structure of these tumors does not hold the tubes a place long enough for them to be effective. In the majority of cases in which the emanation tubes have been used the patient have been of advanced age and have had wide spread, highly malignant growths requiring extensive operation.

Lower W. E. The End Results of Operations for Cancer of the Bladder. *Ann Surg* 9: 123, 1915.

Some surgeons believe that all bladder tumors are potentially malignant while others base the diagnosis entirely upon the histologic findings. The methods of classification also vary. Burger classification has been widely accepted.

Geraghty in 1906 classified bladder tumors from the therapeutic standpoint. Judd and Harrington divide them into two classes, one consisting of those which can be treated satisfactorily by endo-vesical methods, and the other those requiring operation. According to Ullie and McHorney there are two types of tumor those amenable to destruction by the high frequency current and those which must be dealt with by radical operation.

As it is often impossible to determine the type of the growth from the frozen section at the time of operation, the author believes that the cystoscopic examination which shows the tumor to be pedunculated or sessile encrusted or sloughing, single or

multiple is about as dependable as any method of diagnosis.

Three cardinal symptoms of bladder tumor are hematuria, pain, and frequency of urination. Burger stated that malignancy is indicated by (1) indication noted on rectal vaginal, or cystoscopic examination (2) sloughing (3) lack of reaction to fulguration (Brausch states that if tumor does not respond to three or four treatments with the high-frequency current it may be considered malignant, (4) the age of the patient; and (5) the number and size of the tumors (so called benign tumors are apt to be multiple).

The operability of tumor depends on the length of time that has elapsed between the first symptoms and the operation. In 115 cases cited by Lynch the symptoms had been present for from one to four years in 70 per cent and from three to four years in 40 per cent. In 75 cases reported by Caulk the average duration of symptoms was ten years while in 91 cases reviewed by Judd it was twenty six months, and in sixty three cases cited by Thoma it varied from two weeks to twenty five years.

Tardy recognition is not due to absence of symptoms but to lack of appreciation of their significance. Blood in the urine is always pathologic.

Lower report deals only with the surgical treatment, that is, excision or removal with the actual cancer. Lower still believes that carcinoma is a local disease that rational treatment consists in complete and radical excision of the involved area, and that the condition remains local for long period and does not metastasize readily. In 1905 Gardner stated that the transurethral method or subtotal cystectomy gave the best results. Lower feels that freer dissection of the bladder from the peritoneum, freeing off of the surrounding area, better protection of the tissues and when possible clamping around the tumor before the bladder is opened and cutting on the bladder side of the clamp is an efficient method of preventing contamination and the transplantation of cancer cells.

The tendency of all malignant bladder tumors to recur whatever method of removal is used, has long been recognized. Constant vigilance is therefore necessary. The patient should be told to return for cystoscopic examination twice at intervals of three months three times at intervals of six months, and three times at intervals of one year thus covering a period of five years. The absence of recurrence after five years seems to indicate cure.

With regard to end results, the author quotes Gardner, Thoma, Geraghty, and Scholl whose reports are based on a total of 24 cases. He then gives the results in 68 cases of his own, bringing the total number to 190. The study of these reports leads to the following conclusions.

A large percentage of malignant tumors are of papillary origin and therefore not referred to the surgeon until late.

The percentage of recurrence is high whether excision or cauterization is done.

3. Recurrence is not a contra indication to treat ment as some of the best results have come from operation for recurrences.

4. Continued observation after operation is essential as the mortality of carcinoma of the bladder is to be reduced.

5. The good results of the treatment of recurrences are due to the fact that recurrences are nearly all local and very seldom metastasize.

JOHN P. O'NEIL, M.D.

Fromstein R. Gunshot Injuries of the Urethra and Their Treatment (Schussverletzungen des Harnrohrs und ihre Behandlung). *V. j. Chir. Arch.* 19 2, 4, 9.

At the beginning of the war adequate guiding principles for the treatment of injuries of the urethra are lacking because in civil practice injuries of the pendulous portion are very rare and injuries of the perineal portion are seen rather as complications of extensive wounds of the soft parts, rectal lesions, etc. In war the reverse is true isolated injuries of the penis being common and the break in the continuity of the urethra more important than the perforation of the surrounding tissues.

Fromstein reports 5 cases. The pendulous portion of the urethra was affected in forty five and the scrotal or perineal portion in 7. Among the latter there are fourteen cases of isolated injury of the urethra.

Strangury is characteristic of an injury of the urethra; this either cannot be relieved at all or is relieved immediately. The prognosis depends upon its presence or absence and the condition of the para-urethral tissues. When sufficient time elapses between the injury and the first micturition (five to seven hours) fistulous canal forms without urinary infiltration and the subsequent constriction is correspondingly slight.

Patients admitted to the hospital before the first emptying of urine should not be tested functionally even when injury of the urethra is suspected but should be taken under treatment directly with periodic catheterization preferably with silk catheter having a Merz bend. If rupture of the urethra is demonstrated and the patient has not yet urinated, treatment must be directed to securing regular emptying of the bladder; the prevention of urinary infiltration and stricture and the hastening of the healing of the wound. The first two objects are accomplished most easily with retention catheter. This should be changed as seldom as possible because if its re-introduction meets with an obstruction the formation of proximal fistula retrograde catheterization and urethrotomy will be necessary. The author denies that the retention catheter favors the formation of strictures.

If a ragged urethral wound is not primarily resected or the sutured wound does not heal by primary intention, stenoses are unavoidable. On the other hand the retention catheter hinders spontaneous closure of the fistulous tract and should

therefore be removed as soon as possible—that is as soon as the wound of the soft parts begins to cicatrize and the danger of urinary infiltration appears to be passed. If then the fistula does not heal spontaneously it must be excised. As failure to heal is usually due to the presence of a foreign body such as a silk ligature, the author uses catgut even in plastic operations, employing silk only for skin sutures. To cover defects he uses non-pedicated flaps of fascia lata and the inner fold of the prepuce. Even with very large flaps, however, he was unable to prevent stricture formation. He considers the mobilization of the urethral tube more important and when the defect was not too large got along without transplantation. After completion of the work of sutures the catheter should be removed. When the mucosa was not included in the suture and erections were prevented, healing resulted even without central division of the urine.

In the treatment of strictures the author met with several unfavorable conditions. Whereas traumatic fistula could be prevented in one way or another or cured, this was not true of strictures. Preventive operations, consisting of excision of the crushed edges and primary suture, are justifiable but in practice conditions are such that a certain amount of stenosis is unavoidable. Therefore if the cicatricial tissue is slight in amount and soft, and if the use of bougie has not been necessary for two or three years, the patient may be considered cured. The treatment of stricture should be operative, provided the careful use of bougie in conjunction with hot baths or sulphur baths has been ineffectual. The results depend not so much upon the operative procedure as upon the nature of the injury. The author classifies injuries into five classes with an increasingly poor prognosis: (1) tangential transverse injuries of the urethral wall; (2) ruptures of the urethral wall without special involvement of the para-urethral tissues; (3) longitudinal tears; (4) more extensive dismemberment of the urethra and its surroundings; (5) injuries in the sphincteric portion.

In cases of the first class, spike-shaped cicatrix forms and can be easily removed by double internal urethrotomy. In those of the second class there is ring-shaped or cylindrical rigid stenosis and according to the circumference of the stricture urethrotomy or resection is indicated. Cases of the third class should be treated with external urethrotomy, excision of the scar and suture. The author obtained a cure in 60 to 65 per cent of cases without the use of retention catheter by beginning with the use of bougies ten to eleven days after the operation. For cases of the fourth class he advises radical methods. He has had no failures when after the resection the cut edges of the urethra were sutured and the urine diverted. If primary suture was impossible because the diastasis was too great it was nevertheless possible to hold the unresorbable cicatricial recurrences within moderate limits after the resection and to achieve good result by the use of

bougies and urethrotomy. The fifth class of cases are usually complicated by injuries of the rectum and the pelvic bones. Later after the subsidence of the symptoms, extensive cicatricial deformities remain which in conjunction with the loss of the actinodistability of the prostatic portion often present insurmountable difficulties. The author recommended to each age three patients with suprapubic bladder fistula and believes that in other cases he will be obliged to employ the internal lithotomy.

ON ORCHIDECTOMY

GENITAL ORGANS

Chemnitz, W. The Operation of Laying into the Scrotum the Testicle Retained in the Inguinal Canal (*Operation der Hernia Inguinalis des im Inguinalkanal retinirten Hodens in das Skrotum*). *Archiv f. u.*

The author establishes the principle that the testis must not be removed for cryptorchidism because although the spermatozoic stream is usually atrophied the secondary gland is not.

In regard to the proper age for operation he states that the testis frequently sinks down into the scrotum spontaneously and therefore the operation should not be done too early. If the testis has been displaced into the upper part of the scrotum it needs no additional fixation as it usually sinks down spontaneously and normal development is only hindered by traction.

Chemnitz has performed the operation thirty times on ten patients. Light of the case has been under observation for periods ranging from six months to five years. The results are good in two cases, satisfactory in three and poor in three. All of the patients are over 9 years of age. In nine cases the spermatic cord is completely mobilized and thus complete mobilization is not attempted.

In the author's opinion it is mobilization of the spermatic cord is the most important part of the operation. Not only should the deferens and its blood vessel be mobilized most carefully along the course of the future inguinal canal, but the portion of the spermatic cord hanging in the pelvis should also be freed. The firm connective tissue bands which often fix the spermatic cord to the pelvic tissues should be divided with the scissors. From the peritoneum the canal can be separated more easily.

Although the blood vessels interfere with the lowering of the testis to great extent at this time as they must never be divided. The loosening of the blood vessels in the pelvis is accomplished easily but is less mobilizing than the separation of the canal. Experiments on cadavers show that mobilization of the pelvic parts of the spermatic cord causes an average lengthening of about 5 centimeters. As there is no reason for fixing the testis in the lower portion of the scrotum, it need be fixed only in the simplest manner and in children no fixation at all is necessary. In 90 per cent of the cases the in-

dication for operation is usually the presence of a hernia or cyst. The author was unable to determine the significance of the trophic tests after the operation.

von Hoser (2)

Reitterer, J. and Voronoff, S. The Local and General Effect of Resection of the Deferent Canals (*Effet local et général de la résection des canaux déferents*). *J. d'and. méd. et chir.*

Numerous experiments have demonstrated that after ligation or resection of the deferent canals pre-existing bulbo and potencies continued persist. The authors' earlier experiment with ligatures were not satisfactory, often the continuity of the canals was not interrupted completely. In the experiments reported in this article 6 to 8 cm. of the deferent canal of dogs were resected and the morphological and structural changes caused in the testicular tissues by the resection were compared with the findings of histological study of the testes of normal animals whose deferent canals had not been resected.

The authors deal especially with the epithelial lining of the seminiferous tubules. In an adult dog this lining is composed of a common cytoplasm traversed by an enormous filament constituting wide-meshed reticulum. When the deferent canal had been resected for a year the filaments were found to be more abundant and the reticulation looser.

The important fact demonstrated by the experiments is that contrary to the theory generally accepted since the findings of Noel and Beauvais, namely, that there is no hypertrophy of the interstitial or intertubular connective tissue as the sexual desire and potency normally persist after resection of the deferent canal, due to the effect upon the organism of the continued secretion of testicular sperm rather than to the action of the so-called pubertal gland (interstitial gland).

After resection those nuclei elements of the testicle which had arrived at their full development at the time of resection show some degeneration, but those which are in the early stages of development continue to develop. Spermatogenic evolution continues in the absence of sperm excretion. The cytoplasm however is denser and does not liquefy to form thick bodies which the spermatozoa can escape. The development is slow and the successive forms of the cellular line remain here they are produced. Sertoli cells continue to be produced but are not found in the testis after resection of the deferent canal.

In the authors' opinion previous observers are too ready to conclude that the seminal layer of cells in the seminiferous tubules degenerated or atrophied. If they had waited and examined the apparently increased Sertoli cells after a period of eight to twelve months they could have found that they had again evolved to the state of seminal cells.

W. A. BROWN

Rankin, F. W. and Jodd, E. S. Emphysema of the Scrotum the Result of Diverticulitis of the Sigmoid with Perforation. *Surg. Gynec. & Obst.* 9: 335, 5

The patient was a man 46 years of age who registered at the Mayo Clinic November 19, complaining of pain and soreness in the left lower abdominal quadrant. At first this pain was sharp and shooting and confined to the lower part of the abdomen on the left side but later it radiated into the perineum and across the entire lower part of the abdomen. The patient was nauseated but did not vomit. His temperature was 100 degrees F. There was no blood in the stools and no diarrhea or constipation. The attacks occurred intermittently for three years, increasing in severity and frequency. Two grams of morphine daily were required for relief. Six weeks before examination marked frequency of urination with burning began although no blood or gravel was found in the urine. On two occasions gas was passed from the urethra.

The physical examination was negative. The urine showed albumin, erythrocytes and pus. Combined phenolsulphophthalein test was 5 per cent, and there was 1/4 oz. of residual urine. The leucocytes numbered 7,300 and the erythrocytes 4,550,000. The hemoglobin equaled 74 per cent. The roentgenological diagnosis was obstruction in the sigmoid flexure. On digital examination of the rectum an obstruction was met principally on the right side about 9 cm. from the anal orifice. A tentative diagnosis was made of diverticulitis of the sigmoid attached to the bladder causing a secondary cystitis and an intermittent fistula.

Operation November 9, 1919 revealed a mass about 9 cm. in diameter deep in the pelvis and attached to the left wall of the bladder. This was identified as the sigmoid with much inflammatory

tissue about it. Multiple diverticula of the sigmoid could be demonstrated above the growth. A loop of ileum adherent in the mass was not removed for fear of perforation. The colon above was greatly distended with gas. Resection of the entire mass seemed too formidable an operation to be performed in this stage therefore a preliminary colostomy was done.

The immediate convalescence was uneventful. The colostomy had not been opened. On the eighth day the patient complained of quite severe gas passing suddenly noticed that his scrotum was beginning to swell. This swelling was painless but occurred at a considerable rate. Within twenty hours the scrotum was about 30 cm. in diameter and air crackles were heard within it. It seemed certain that the condition was in no way connected with the extravasation of urine as the patient voided with ease and the physical appearance and feel of the tissues were characteristic. The fact that a fistula was known to exist between the bladder and sigmoid did not explain the condition since it offered no anatomical basis for such an emphysema. The abdomen was ballooned up with gas and peristalsis was visible. The colostomy was opened and abdominal distention thereby relieved. The emphysema of the scrotum decreased very gradually. Two weeks elapsed before it was complete. The patient was none the worse for this unusual complication.

Because of the peculiar anatomical arrangement it seemed highly improbable that gas made its way into the bladder and thence into the subcutaneous tissues of the scrotum. A more plausible explanation is that leakage from another perforation or the same one burrowed through the peritoneum and under the fascial layers to emerge in front of the triangular ligament and infiltrate the adjacent subcutaneous tissues.

L. H. FOWLER, M.D.

Butler, T. H. The Influence of Trauma upon the Onset of Interstitial Keratitis. *Brit J Ophth* 9, 4, 4

The author draws the following conclusions:

1. An attack of interstitial keratitis may be precipitated by an accident to a cornea which is predisposed to the disease by syphilis or tuberculosis.

2. It is possible that a very slight trauma such as the instillation of drops or the irritation of general anæsthetic may have the same effect.

3. The attack in the injured eye may be followed by interstitial keratitis in the uninjured eye.

4. It is possible that a injury to one eye may cause an attack of interstitial keratitis in the other eye.

JAMES P. IRELAND, M.D.

Verhoeff, F. H., and Lamoliné, A. N. Hypersensitiveness to Lens Protein. Cataract Operation. *Am J Ophth* 92, 700

In previous papers the authors have shown that about 8 per cent of persons are hypersensitive to lens protein, and that when, in such persons, the lens capsule is opened by operation or injury, intra-ocular inflammation results. Because of the danger of rupturing the lens capsule in the intra-capsular operation they suggest desensitizing the patient's lens protein and removing the cataract by dissection followed by simple linear extraction. A case in which this was done successfully is reported.

JAMES P. IRELAND, M.D.

Hawthorne, C. O. Observations on the Significance of Retinal Hemorrhages. *Brit M J* 9, 495

In the author's opinion retinal hemorrhage may be without clinical significance but when this is true the bleeding is slight, as in certain cases of pneumonia, pyonephrosis, malignant disease of the viscera, mitral disease, etc. He believes that hemorrhage of this type would be seen more often if routine ophthalmoscopic examinations were made. Other retinal hemorrhages may be caused by violence such as birth trauma. A third type is the severe retinal hemorrhage endangering vision, which is not due to violence and is not accompanied by organic disease. The latter Hawthorne discusses in detail, describing particularly the changes in the vascular walls.

Uncomplicated retinal hemorrhage is of the same character as hemorrhage occurring in other parts of the body which is not due to violence or any appreciable organic lesion. A variation from the normal rate of blood coagulation will not account for it. The probable explanation is rupture of vessels following damage to their walls, this damage in turn being the result of change in the quality of the blood or slight violence—perhaps mere changes in intra-ocular tension—causing vessels which are particularly susceptible to the destructive influence of mechanical force.

THOMAS D. ALLAN, M.D.

SURGERY OF THE NOSE, THROAT AND MOUTH

NOSE

Wojciechowski, W. Polyps of the Base of the Skull
(Ueber die Polypen der Schadelbasis) *Stenographisch*
Görlitz, f. Otho. Hols. u. Knechtbrunn
Potsdam, 1908

The monograph published by Kobylinski in 1908 completely exhausted the subject of polyps of the base of the skull up to that time. During the last decade however views have changed somewhat and therefore new critique is necessary. The author discusses the following points:

The histologic similarity of the tumors. Usually polyps at the base of the skull are angiofibrosarcomata. In one of the author's cases a marked difference between the peripheral and the central portions of the tumor was evident. In the former the number of cells is greater suggesting the microscopic picture sarcoma although macroscopically the neoplasm appeared to be ordinary polyp. Choanal tumor, on the other hand, consist mainly as is well known, of pure fibrous or edematous fibrous tissue.

The operative technique for the removal of polyps at the base of the skull. Of the old methods the route through the palate and the suprarostral pharyngotomy of Jernitsch are the most dangerous. They do not cause disfigurement of the face, but they are not applicable to all cases. Facial methods must be avoided because of the resultant disfigurement. Therefore Denker proposed to reach the tumor through the vestibule of the mouth and the antrum of Highmore should be accepted for those cases in which the malignant tumor is located in the nasal cavity or the antrum of Highmore. Further experience is necessary, however to determine whether this route is suitable for the removal of large and deep seated growths. In one of the three cases operated on by the author by Denker's method there was a recurrence which resulted in death. This was a tumor of the nasopharynx. The route through the palate was used once by the author and the recurrence of the tumor removed later through the cleft in the palate. During the year the patient was kept under observation following the operation no further recurrence developed. The cleft in the palate caused no disturbance of function. In one severe case Kocher's section of the upper jaw was done. Another case was operated on according to the Hirtle method with reflection of the lateral nasal wall.

3. The reports of Kaprisonoff concerning the choice of operative methods in relation to the anatomic characteristics. In dolichocephalic persons the tumors at the base of the skull are reached more easily through the palate whereas in brachy-

cephalic persons they are reached more easily through the nose.

4. The classification of polyps at the base of the skull as a condition for the general surgeon or the rhinologist. In the author's opinion the sooner the patient consults a rhinologist the sooner an accurate diagnosis will be made. A recurrence will also be recognized by a rhinologist sooner than by a surgeon. A similar picture is presented by carcinoma of the larynx, the prognosis of which depends upon timely operation. On the basis of his experience the author comes to the conclusion that the surgical treatment should consist of the most conservative operation possible following early diagnosis.

WALCZER (2)

Swarczewski, L. Intracranial Cephaloceles (Zur Frage der intracranialen Cephaloceles) *Monatsh.*
J. 1911, 7, 760

This article is a report of 18 cases. The first is that of a girl 7 years old. A growth removed by operation from the right nasal cavity was diagnosed on microscopic examination as a cephalocele but later more thorough examination showed that the structure of the tumor was as complicated as that of teratoid tumors, but with an abundant admixture of gliosis tissue. The second case is a case of naso ethmoidal cephalocele in child 6 years old. Operation as refused.

The author classifies intracranial cephaloceles into three groups: (1) the anterior cephaloceles, that is, the common anterior cephaloceles which grow through in the form of tumors in the nose, (2) the middle cephaloceles, which penetrate into the skull cavity through the lamina cribrosa, and (3) the posterior cephaloceles which may extend into the nasopharyngeal space and the posterior parts of the nose. The first group offers no diagnostic difficulties. The diagnosis of those of the second group is more difficult as usually they resemble polyps or tumors growing from the upper nasal passage. The early appearance and slow growth of the tumor, the displacement of the nasal septum and the ossified nodes of the process are valuable diagnostic features. A certain diagnosis can be made only on the basis of microscopic examination and an outflow of cerebrospinal fluid when an attempt is made to remove the growth partially. The posterior cephalocele is usually associated with other congenital changes in the skull and the brain.

The prognosis of anterior and middle cephaloceles is good but that of the posterior forms is less favorable.

In cases of anterior cephaloceles the extirpation of the tumor followed by plastic closure of the bony defect comes up for consideration. In cases of

middle cephaloceles a waiting policy should be adopted if non-suppurative complications set in the growth should be removed intranasally but if suppurative complications develop and there is escape of cerebrospinal fluid, extranasal opening of the nasal sinuses with plastic closure of the bone defect is indicated. Posterior cephaloceles are inoperable.

vo Housar (2)

THROAT

Blak, D. Resection of the Superior Laryngeal Nerve in Tuberculosis of the Larynx (Über die Resektion des N. laryngeus sup. bei Larynx-tuberculose) *Tuberkel* 9, 4.

As the author was unable to decrease the pain and rough of laryngeal tuberculosis with the usual surgical measures, he decided to try radical treatment in the form of resection of the superior laryngeal nerve. In the beginning, he applied the operation only to serious, hopeless cases, but as he became convinced of the ease of the technique, he tried it also in light cases which were not benefited by cauterage and the use of the galvanocautery. Altogether twenty five resections of the superior laryngeal nerve were done (twenty patients bilateral resection in five cases). In seven cases the condition was unilateral.

The superior laryngeal nerve may be exposed from within through the larynx, pharynx or from without by way of the neck. In the latter procedure it may be sought through a horizontal incision running parallel with the border of the thyroid cartilage or through a vertical incision along the border of the sternocleidomastoid muscle. The author prefers the horizontal incision.

The operation is done under local anesthesia induced with 1 per cent cocaine-adrenalin solution or 1 per cent novocaine-adrenalin solution. Only the denervation itself causes pain. In some cases the pain radiates into the ear (four times in twenty-five

cases). Occasionally the search for the superior laryngeal nerve is difficult especially when the space between the hyoid bone and the upper border of the thyroid cartilage is narrow. Moreover the surgeon may mistake the border of the hyoid bone for the border of the thyroid cartilage and may penetrate at a higher level than necessary reaching the hypoglossal instead of the superior laryngeal nerve.

After the operation the nearby lymph glands of the neck and the submaxillary glands become swollen but the swelling disappears in the course of a few days. Occasionally the arytenoid and the aryepiglottic folds also swell. Swallowing the wrong way which usually occurs in patients operated upon is a serious complication.

In the author's cases the excruciating pain disappeared entirely after the operation and there were no recurrences in the four or five months during which he kept the patients under observation. Anesthesia of the larynx results from the resection of the superior laryngeal nerve, paresthesia and motor disturbances of the vocal cords were never observed. As the tactile sense remains normal even after bilateral division of the superior laryngeal nerve, the inferior laryngeal nerve or the rami communicantes which unite it to the superior laryngeal nerve must contain sensory fibers in addition to motor fibers.

In the author's opinion resection of the superior laryngeal nerve is necessary in cases of severe dysphasia in which other remedies cause no improvement. In cases of unilateral development of the tuberculosis it may effect cure. Energetic local treatment may be undertaken afterward. It is not a dangerous procedure.

Simple resection of the superior laryngeal nerve by Hoffmann's method does not give permanent results therefore it is better to inject alcohol into the exposed nerve.

The article is supplemented by an extensive bibliography.

WALKER (2)

In treatment of cerebral abscess by wide trephination without drainage and routine therapy R. F. FLETCHER
Lyon Clin. 9, 114, 40

A case of epidemic encephalitis with papilledema simulating brain tumor S. NACCARATI N. York M. J. & Med. Rec. 9, 2, 1915, 336

Amphylactic phenomena in cerebral rhinococcoses G. S. RIV. P. B. ROME, 9, 1915, 101

T. cases of brain tumor which offer peculiar difficulties in diagnosis I. J. RUTHER. Med. & Surg. 9, 2, 1915, 95

Tumors of the oral cavity L. F. H. R. CH. COLONIA 9, 2, 1915, 1

Tumor of the pituitary: report of a case I. H. HALL. Kentucky M. J. 9, 1915, 1

The neuroepithelial (dural epithelioma) the source of the cranial nerve tumors H. C. WILSON. Med. Press, 9, 11, 1915, 99, 34

Tumor of the small intestine: a autopsy finding I. D. I. WILSON. N. York M. J. & Med. Rec. 9, 1915, 75

An operative case for the total extirpation of tumor in the cerebellopontine angle: preliminary report W. I. D. WILSON. Bull. Johns Hopkins Hosp. 9, 1915, 144, 191

Occipital encephalocoele J. L. H. WILSON. (Continued) J. M. 9, 11, 1915, 109

A simple method of correcting congenital facial deformities by means of epithelial anastomosis J. L. H. WILSON. Zentralbl. f. Chir. 9, 11, 1915, 7

Primary tumor of the motor root of the trigeminal ganglion during the dissection of the sensory root for trigeminal neuralgia A. W. WILSON. Surg. Gynec. & Obst. 9, 1915, 35

A case of pituitary tumor C. W. WILSON. J. Roy. Army Med. Corps. Lond. 9, 1915, 14

Chromophore parathyroid adenoma: case report H. J. FINE. California St. J. M. 9, 1915, 10

A rare typical round tumor of the lip: a report O. R. WILSON. The Laryngologist 9, 1915, 1

Concurrent bilateral parathyroid adenoma: a case report A. W. WILSON. J. M. 9, 1915, 10

Observations on the histology of the parathyroid gland: a study of the parathyroid gland in the parathyroid gland of the parathyroid gland J. L. H. WILSON. The Laryngologist 9, 1915, 1

A simple method of using structures of the mandible for anastomosis J. W. WILSON. J. Orthodont. Oral Surg. & Radiography 9, 1915, 1

A case of tumor of the parathyroid gland: a study of the parathyroid gland in the parathyroid gland of the parathyroid gland J. L. H. WILSON. The Laryngologist 9, 1915, 1

A case of tumor of the parathyroid gland: a study of the parathyroid gland in the parathyroid gland of the parathyroid gland J. L. H. WILSON. The Laryngologist 9, 1915, 1

A case of tumor of the parathyroid gland: a study of the parathyroid gland in the parathyroid gland of the parathyroid gland J. L. H. WILSON. The Laryngologist 9, 1915, 1

A case of tumor of the parathyroid gland: a study of the parathyroid gland in the parathyroid gland of the parathyroid gland J. L. H. WILSON. The Laryngologist 9, 1915, 1

A case of tumor of the parathyroid gland: a study of the parathyroid gland in the parathyroid gland of the parathyroid gland J. L. H. WILSON. The Laryngologist 9, 1915, 1

A case of tumor of the parathyroid gland: a study of the parathyroid gland in the parathyroid gland of the parathyroid gland J. L. H. WILSON. The Laryngologist 9, 1915, 1

A case of tumor of the parathyroid gland: a study of the parathyroid gland in the parathyroid gland of the parathyroid gland J. L. H. WILSON. The Laryngologist 9, 1915, 1

A case of tumor of the parathyroid gland: a study of the parathyroid gland in the parathyroid gland of the parathyroid gland J. L. H. WILSON. The Laryngologist 9, 1915, 1

A case of tumor of the parathyroid gland: a study of the parathyroid gland in the parathyroid gland of the parathyroid gland J. L. H. WILSON. The Laryngologist 9, 1915, 1

A case of tumor of the parathyroid gland: a study of the parathyroid gland in the parathyroid gland of the parathyroid gland J. L. H. WILSON. The Laryngologist 9, 1915, 1

A case of tumor of the parathyroid gland: a study of the parathyroid gland in the parathyroid gland of the parathyroid gland J. L. H. WILSON. The Laryngologist 9, 1915, 1

A case of tumor of the parathyroid gland: a study of the parathyroid gland in the parathyroid gland of the parathyroid gland J. L. H. WILSON. The Laryngologist 9, 1915, 1

A case of tumor of the parathyroid gland: a study of the parathyroid gland in the parathyroid gland of the parathyroid gland J. L. H. WILSON. The Laryngologist 9, 1915, 1

A case of tumor of the parathyroid gland: a study of the parathyroid gland in the parathyroid gland of the parathyroid gland J. L. H. WILSON. The Laryngologist 9, 1915, 1

A case of tumor of the parathyroid gland: a study of the parathyroid gland in the parathyroid gland of the parathyroid gland J. L. H. WILSON. The Laryngologist 9, 1915, 1

A case of tumor of the parathyroid gland: a study of the parathyroid gland in the parathyroid gland of the parathyroid gland J. L. H. WILSON. The Laryngologist 9, 1915, 1

A case of tumor of the parathyroid gland: a study of the parathyroid gland in the parathyroid gland of the parathyroid gland J. L. H. WILSON. The Laryngologist 9, 1915, 1

The treatment of cancer of the parathyroid gland A. J. OCHSNER. Ann. Surg. 9, 11, 1915, 3

Neck

The histogenesis of the symmetrical lipomatous of the neck described by M. Leung M. BUVALINI Arch. Ital. Chir. 9, 11, 1915, 23

Nervous control of the thyroid gland W. B. C. NO. North. West. Med. 9, 11, 1915, 30

Basal metabolism in the thyroid A. C. M. NO. Arch. Med. Chir. 9, 11, 1915, 3

Studies in the Kottmann reaction for thyrotoxicity W. J. PETERSON. J. T. H. DOX. Arch. Int. Med. 9, 11, 1915, 345

Observations on the unilocular stem in the thyroid gland W. J. PETERSON. G. C. H. California St. J. M. 9, 11, 1915, 306

Report of an interesting case of lipomatous and hypothyroidism J. C. LEUNG. Ann. Med. 9, 11, 1915, 3

Hypertrophic and hypothyroidism J. W. SUTHER. J. Am. St. M. Soc. 9, 11, 1915, 3

The pathology of hypothyroidism I. B. W. LEO. J. Michigan St. M. Soc. 9, 11, 1915, 300

The glucose mobilization rate in hypothyroidism D. J. S. WILSON. Arch. Int. Med. 9, 11, 1915, 307

The surgical aspect of hypothyroidism G. W. C. LEO. J. Michigan St. M. Soc. 9, 11, 1915, 3

Göster. L. M. WILSON. Deutsche med. Wochenschr. 9, 11, 1915, 3

The relation of water to the production of goiter A. D. C. LEO. Kentucky M. J. 9, 11, 1915, 3

Pre-operative and postoperative studies in goiter C. J. WILSON. J. Med. Am. Assoc. 9, 11, 1915, 3

The surgical considerations of goiter W. J. LEO. North. West. Med. 9, 11, 1915, 3

Small goiter: the surgical considerations of goiter W. J. LEO. North. West. Med. 9, 11, 1915, 3

Small goiter: the surgical considerations of goiter W. J. LEO. North. West. Med. 9, 11, 1915, 3

Small goiter: the surgical considerations of goiter W. J. LEO. North. West. Med. 9, 11, 1915, 3

Small goiter: the surgical considerations of goiter W. J. LEO. North. West. Med. 9, 11, 1915, 3

Small goiter: the surgical considerations of goiter W. J. LEO. North. West. Med. 9, 11, 1915, 3

Small goiter: the surgical considerations of goiter W. J. LEO. North. West. Med. 9, 11, 1915, 3

Small goiter: the surgical considerations of goiter W. J. LEO. North. West. Med. 9, 11, 1915, 3

Small goiter: the surgical considerations of goiter W. J. LEO. North. West. Med. 9, 11, 1915, 3

Small goiter: the surgical considerations of goiter W. J. LEO. North. West. Med. 9, 11, 1915, 3

Small goiter: the surgical considerations of goiter W. J. LEO. North. West. Med. 9, 11, 1915, 3

Small goiter: the surgical considerations of goiter W. J. LEO. North. West. Med. 9, 11, 1915, 3

Small goiter: the surgical considerations of goiter W. J. LEO. North. West. Med. 9, 11, 1915, 3

Small goiter: the surgical considerations of goiter W. J. LEO. North. West. Med. 9, 11, 1915, 3

Small goiter: the surgical considerations of goiter W. J. LEO. North. West. Med. 9, 11, 1915, 3

Small goiter: the surgical considerations of goiter W. J. LEO. North. West. Med. 9, 11, 1915, 3

Small goiter: the surgical considerations of goiter W. J. LEO. North. West. Med. 9, 11, 1915, 3

Small goiter: the surgical considerations of goiter W. J. LEO. North. West. Med. 9, 11, 1915, 3

Small goiter: the surgical considerations of goiter W. J. LEO. North. West. Med. 9, 11, 1915, 3

Small goiter: the surgical considerations of goiter W. J. LEO. North. West. Med. 9, 11, 1915, 3

Small goiter: the surgical considerations of goiter W. J. LEO. North. West. Med. 9, 11, 1915, 3

Small goiter: the surgical considerations of goiter W. J. LEO. North. West. Med. 9, 11, 1915, 3

SURGERY OF THE CHEST

Chest Wall and Breast

Sarcoma of the rib R. F. FLETCHER. Ann. Surg. 9, 11, 1915, 3

A case of pulsatile empyema J. L. H. WILSON. J. M. 9, 11, 1915, 3

Empyema of the chest J. L. H. WILSON. J. M. 9, 11, 1915, 3

Treatment of pyogenic pleurisy C. W. WILSON. J. M. 9, 11, 1915, 3

Operative treatment of pyogenic pleurisy C. W. WILSON. J. M. 9, 11, 1915, 3

A case of pyogenic pleurisy C. W. WILSON. J. M. 9, 11, 1915, 3

A case of pyogenic pleurisy C. W. WILSON. J. M. 9, 11, 1915, 3

A case of pyogenic pleurisy C. W. WILSON. J. M. 9, 11, 1915, 3

A case of pyogenic pleurisy C. W. WILSON. J. M. 9, 11, 1915, 3

Infection in the mediastinum in fulminating empyema I. H. D. Surg. Gynec. & Obst. 9, 11, 1915, 3

A contribution to our knowledge of mediastinal empyema Arch. Ital. Chir. 9, 11, 1915, 3

A case of empyema of the mediastinum F. H. FRANKLIN. Zisch. P. Th. 9, 11, 1915, 3

The importance of examining the diaphragm I. H. D. Surg. Gynec. & Obst. 9, 11, 1915, 3

The human breast: a plea for self-directed treatment based on more accurate diagnosis W. B. BUVALINI. J. Iowa St. M. Soc. 9, 11, 1915, 3

T. treatment of the breast with the report of a case P. H. I. Arch. Ital. Chir. 9, 11, 1915, 3

T. treatment of the breast with the report of a case P. H. I. Arch. Ital. Chir. 9, 11, 1915, 3

T. treatment of the breast with the report of a case P. H. I. Arch. Ital. Chir. 9, 11, 1915, 3

T. treatment of the breast with the report of a case P. H. I. Arch. Ital. Chir. 9, 11, 1915, 3

T. treatment of the breast with the report of a case P. H. I. Arch. Ital. Chir. 9, 11, 1915, 3

- Tumors of the breast J C BLOOMBERG North est Med 9 333,335
- A note on cases of carcinoma mammae G H COLE Lancet 9 334,7
- Report of case of bilateral carcinoma of the breast WERNER and BLOCH Canadian M A J 9 2, 334, 699
- Postmenstrual therapy in breast cancer B N CANOY Surg 1931, 9 335, 73
- The final results of operations for cancer of the breast I L BATES Am Surg 9 335, 337 [13]
- Final result of operation for carcinoma of the breast H GIER and D S AMES Am Surg 9 335, 340
- Papier du m de de la queue A B 121 Rev Ave med Argent 9 2, 335, 339

Trachea and Lung

- Tracheal resection and tracheostomy, its special contraindications of transverse resection H MARINICH Monatsh f Chirurg 9 335, 336
- The diagnosis of foreign bodies in the bronchi J McCas Illinois M J 9 335, 74
- Two cases of foreign body in the left bronchi removed endoscopically M R W 12 J Am M A 9 335, 339
- Abscess of the lung etiology H W L South M J 9 2, 335, 344
- The physical signs in pulmonary abscess C M SCHLES 172 173 N York State J M 9 335, 377
- A review of fourteen cases of pulmonary abscess W O H THOM Mid Surg 9 2, 335, 37
- Pulmonary abscess due to lodgment of tooth E J P THOM Pennsylvania M J 9 335, 369
- Acute lung abscess caused by therapeutic pneumothorax H W RICH Am J M R 9 335, 375
- The nature of lung abscess C O GROSS South M J 9 335, 355
- The establishment of temporary or permanent pulmonary apoplexy in the treatment of adenoma (bronchiectatic lung abscess) W M 12 N York State M J 9 335, 379 [14]
- On the clinical course and diagnosis of postoperative pulmonary abscess C L MINTZ South M J 9 2, 335, 379
- The correct treatment of bronchiectasis J J NEW 8 and L A GRAMM J Missouri State M A 9 2, 335, 390
- A embolism following various diagnosis or therapeutic

procedures in diseases of the pleura and the lung K SCHLAFER Bull Johns Hopkins Hosp 9 2, 335, 336

Heart and Vascular System

- Pulling rupture of the heart and its mechanism A von ALSTADT Frankfurt Zeitsch f P 15 1932, 335, 336 [1]
- Intracardiac surgery—a new method preliminary report D S ALLEN IF A GRAMM J Am M A 9 335, 335 [15]

Pharynx and Esophagus

- The value of retropharyngeal abscess O BRICK Monatsh f Chirurg 9 335, 336 [16]
- A case of impaction of the pharynx by which P L H L LAURET, 1931, 336
- Carcinoma of the esophagus operation (July 2, 1931) no recurrence (9 2) J STONE Proc Roy Soc Med Lond 9 2, 335, 337
- A case of congenital narrowing of the esophagus K P BROWN Edinburgh M J 9 2, 335, 37
- Three new cases of all occlusal stenosis of the esophagus operated upon and cured C GROSS Arch med 9 2, 335, 374
- Esophageal obstructions P P VERNER Am Clin Med 9 2, 335, 37
- A foreign body (tooth plate) in the esophagus P H WESTMANN Proc Roy Soc Med Lond 1932, 15 Sect Laryngol 6
- Major report of the esophagus, particularly from the stomach G LORINGEN Beru Klin Chir 9 2, 335, 390 [15]
- Malignant stenosis of the esophagus and trachea E. RICH 174 Scherz and Wechsler 1932, 335
- A new symptom in carcinoma stenosis of the esophagus E. WERT Fortschrd d Geb d Röntgen strahlen 9 335, 39
- Carcinoma of the thoracic esophagus H. LEUBNER, Ann burg 9 335, 311 [16]
- Carcinoma of the deep pharynx removed by lateral pharyngotomy W. HORN 174 Proc. Roy Soc. Med., Lond 9 2, 335, 337
- Combined transpleural and transperitoneal resection of the thoracic esophagus and the cardia for carcinoma C A HARRISON Surg Gynec & Obst 9 335, 34 [16]

SURGERY OF THE ABDOMEN

Abdominal Wall and Peritoneum

- Further notes on diseases of the umbilicus T S COTTE Surg Gynec & Obst 9 2, 335, 37 [17]
- An incarcerated inguinal hernia on the right side C BAYNE Zentralbl f Chir 9 2, 335, 67
- Concerning the relations of inguinal hernia to the urinary bladder H FROSTEN Zentralbl f Chir 9 2, 335, 73 [18]
- A case of incarcerated direct inguinal hernia on the left side G DODTMANN Zentralbl f Chir 19 2, 335, 674
- Recurrent inguinal hernia M BALAZS German med 9 335, 340
- Which is preferable in the treatment of oblique inguinal hernia, closure of the peritoneum about nature of the canal or the HERNIA operation? K. HORNAS Zentralbl f Chir 1932, 335, 939

- Unregulated of umbilical hernia BOVET Lyon ch 1932 9 2, 335, 45
- Metastatic suppurative peritonitis case report R L McVORIN Wisconsin M J 9 1932, 335, 47
- Tubercular peritonitis L H SCHMIDT Chir 9 2, 335, 40

Gastro-Intestinal Tract

- General inspection palpation, and percussion of the stomach in the diagnosis of gastric diseases A LUKA Arch exp 1932, 454
- Experimental observations of antral stenosis of the stomach and intestine W. HORN 174 Scherz and Wechsler 1932, 335, 40
- Some remarks regarding the operative treatment of the stomach A. FORTIS J-Lancet, 9 2, 335, 463

- Food results of surgical treatment of diseases of the stomach and duodenum A J A HAMILTON Canadian M. A. J. 922, xiv, 639
- Compensatory hypertrophic pyloric stenosis D W PALMER Arch. Pediat. 9, xxix, 58
- Report of case of hypertrophic pyloric stenosis complicated with marked pylorospasm H L MOORE South M. J. 9, x, 699
- Gastric stomach J H D WELSH Lancet, 9, ccc, 707
- Peptic ulcer notes from Dr. Sippy J E DILLY Texas State M. J. 9, xvii, 57
- Peptic ulcer medical and surgical types W B THOMAS Tex. State M. J. 9, xiv, 5
- The end result of the treatment of peptic ulcer G V BARNARD Tex. State M. J. 922, xvii, 246
- Marginal or prepyloric ulcer A O SENGUPTON Texas State M. J. 9, xiv, 248
- Perforated gastric and duodenal ulcer D PRA An. Fac. de med. de Univ. de Montevideo 922, cii, 91
- The principles of the causal treatment of gastric ulcer V O ROSS Zentralbl. f. Chir. 9, xlix, 87
- The relationship of the pyloric sphincter to recurring ulcer and peptic ulcer of the jejunum H FROSTENBERG Arch. f. klin. Chir. 922, cxx
- Medical treatment of gastric ulcer J J THAYER J. Missouri Stat. M. Ass. 9, xiv, 40
- The effect of antral operations on the stomach upon the motor function of the stomach in cases of gastric and duodenal ulcer O von DREY Beitr. klin. Chir. 9, cxvii, 350
- Two cases of perforated gastric ulcer operated upon and cured H MONOD Bull. et mémoires Soc. de chir. de Paris 9, x, xliii, 93
- Resection of the stomach for perforated ulcer D HUBER Schweiz. med. Wochenschr. 9, lii, 729
- Surgical treatment of ulcer of the lesser curvature A G THIERIAUX Semaine méd. 9, xlix, 700
- Ulcer of the lesser curvature treated by sympathectomy PAVON Bull. et mémoires Soc. de chir. de Paris 9, xliii, 934
- Resection of the body of the stomach for liver report of series of cases with end results F B JENCO and J H L OVA Ann. Surg. 9, lxxv, 400 [18]
- Drainage of the stomach after surgical treatment of chronic peptic ulcer W B K. v. Texas Stat. M. J. 9, xiv, 243
- Two cases of fatal hematemeses due to acute ulceration of the stomach after an operation for ulcer DOUGHERTY Irish Chir. 9, xii, 944
- Factors influencing the life expectancy of patients operated on for gastric ulcer D C BALFOUR Ann. Surg. 9, lxxv, 405
- The anatomy of ulcerations of the stomach R HOFFER Beitr. klin. Chir. 9, cxvii, 355
- Contracture for adhesions in the region of the pylorus R CORREIA Rev. clin. (Lyon) 9, x, 359
- Cancer of the stomach J F GONZALEZ Rev. clin. (Lyon) 9, 5
- The relation between the antral macroscopic and microscopic lesions of gastric cancer also few remarks on the statistics J VOGEL v. Beitr. klin. Chir. 9, cxvii, 351
- Pyloric cancer treated by gastrectomy J A CORREIA Rev. clin. (Lyon) 9, 331
- An ulcerous type of intestinal injury G LAKEHILL F. la. Review 10, xix, 222, part 203
- Report of perforations of the small intestine due to local infection CAL J. Am. M. Ass. 9, lxxx, 947
- Cecal pseudo-tumor of the small intestine occlusive to strangulated hernia ALANUTTE 1 on chirurg. 922, xix, 4
- Dilatation of the duodenum W J T CALK Wharton M. J. 9, xxi, 56
- Foreign bodies in the duodenum W GOLDSCHMIDT Wien. klin. Wochenschr. 9, x, xiv, 6
- A chronic duodenal ulcer following burn L KIRCHMAYR Deutsche Ztschr. f. Chir. 9, cxlii, 99
- Incomplete chronic stenosis of the second part of the duodenum caused by adhesions CHARBONNEL J. de med. de Bordeaux, 9, xxiv, 599
- Peptic ulcer of the jejunum in the light of old and new clinical experience H O HALLER Arch. f. klin. Chir. 9, cxix, 71
- The formation of peptic ulcer in the jejunum M HOLZWEIN Zentralbl. f. Chir. 9, xli, 864 [19]
- The peptic ulcer of the small intestine O HALLER Novy Chir. Arch. 922, i, 68
- A case of subtotal volvulus of the intestine G RAZZA Novy Reforma med. 922, xxviii, 893
- Intestinal colic A A ZATLIN Meditsinskij Graz, 922, i
- Intestinal obstruction W I KENDALL J. Oklahoma State M. Ass. 922, xv, 70
- Acute intestinal obstruction J O CONO Brit. M. J. 922, ii, 598
- Foreign bodies in the intestine rare diagnostic error A M CARSON Spital 9, xli, 383 [20]
- Primary sarcoma of the intestine T HETTEL Orvos. közl. 9, x, xli, 47 [20]
- Rupture of the intestine caused by incarceration of an incarcerated hernia I SCHWAB Deutsche med. Wochenschr. 922, xliii, 800
- A penetrating wound of the perineum with puncture of the intestine F C WAGNER and M. LACHNER J. Am. M. Ass. 9, lxxx, 896 [20]
- Theoretical tuberculous with perforation into the bladder R. DEUTSCHE med. Wochenschr. 9, xli, ii, 69
- Theoretical cancer L. LORE J. de med. de Bordeaux 922, xiv, 59
- Process of the proximal portion of the colon from the clinical-surgical standpoint A I PRUD'HOE Novy Chir. Arch. 9, x, ii, 57 [21]
- The consequences of surgical injury of the median colic vessels G B MACCART Arch. ital. di chir. 9, vi, 33
- Extirpation of the transverse colon with the carcinomatous stomach W VOORDEBOOM Nederl. Tijdschr. Geneesk. 9, lxxv, 356 [22]
- Tumor of the transverse colon extensive resection of the large intestine accompanied with anastomosis recovery P. REZ. Lyon chirurg. 9, xix, 473
- Intestinal occlusion due to pelvic megacolon S. VETZ Lyon chirurg. 9, x, xli, 30
- The value of temporary colostomy L J HONCHERAN J. Am. M. Ass. 9, x, lxxx, 91 [22]
- The elimination of an artificial anus W. von REUBEN Zentralbl. f. Chir. 9, xlix, 717
- The pelvic appendix R. MONTGOMERY Lancet 9, cclii, 553
- Appendicular diverticulum and its sequelae particularly pseudomyxoma peritonei W. LORE Deutsche Ztschr. f. Chir. 9, cxlii, 30
- The differential diagnosis between appendicitis and ureteral calculus, with report of cases A B BROWN J. Arkansas M. Soc. 9, xli, 69
- Appendicitis and enterovesical fistula M. MONTGOMERY med. Wochenschr. 9, lxxx, 53
- Appendix vermiformis also brief note on the

SURGERY OF THE EXTREMITIES

Conditions of the Bones, Joints, Muscles, Tendons, Etc.

- Acromioclavicular from the surgical standpoint P A HENDERSON
Nowy Chir Arch 922, 83
- A case of osteogenesis imperfecta M F L KIRK
Lancet, 9, cent, 66
- Frigitas osseum associated with blue sclerotics II
STEWART Brit Med J 9, 2, 409
- A critical study of two cases of rickets developing in
breast-fed infants A BROWN A M COOKE P F
TIDWELL and I I MACLEOD Arch Pediatr 922
xxiv, 559
- An analysis of 60 cases of osteomyelitis with end-
results J S BRIDLE South M J 9, xv, 7
- A case of fatal osteomyelitis simulating acute articular
rheumatism P GAUTIER Rev méd de la Suisse Rom
922 xii, 570
- Bone suppuration the basic cause of renal calculus in
twenty cases following air wounds H F I VAN Canadian
M Am J 9, xii, 638
- Tuberculosis in children from the standpoint of the
orthopedist J F GOLDSTEIN Boston M & S J 9,
3, clxxxviii, 466
- Tuberculosis in children from the standpoint of the
surgeon L T BROWN Boston M & S J 922 clxxxviii,
470
- Osteitis tuberculousa multiplex cystica N VOORHEES
Nederl Tijdschr Geneesk 922 lxxv, 33
- Tuberculin therapy in suppurative tuberculosis II A
McKINNEY and H TALBOT Pennsylvania M J 922
xxv, 853
- Tumors of bone J C BLOOMCOOP North East Med
922 xii, 308
- Primary multiple sarcomata of the bones B MAYER
Polizin Rome, 922, xxxi, ser. chir 473
- Arthritis F BRIDGES Northwest Med 9, xii, 205
- The experimental production of arthritis A LEVIN
Proc Roy Soc Med Lond 9, xv Sect Odont
65
- Chronic arthritis—some phases in its etiology and
treatment A A FLETCHER Canadian M Am J 922,
xii, 633
- Some observations on the treatment of gonococcal
arthritis in the male N VIGOR South M J 9, xv, 737
- Some diagnostic pitfalls in arthritis L J LEE Illus
Practitioner 9, cent, 26
- Chronic arthritis O I VIKARI Rev Assoc med
argent 9, xxv, 333
- Artificial and acquired connective tissue burns and
their relation to the joint B MARVIN Arch f Clin
Chir 9, cent, 26
- Painful unilateral prosthesis due to overloading of
fragments GUDMILLIOT and BRIAN Presse méd Par
9, xii, 8
- The etiology of ischemic muscular contracture O
BECK Arch f Clin Chir 922, cent, 6
- The nature and treatment of muscular atrophy II C
STEWART and P BARR J Lab and Clin Med 92
746
- The traumatic mechanical origin of spontaneous sep-
arations of cartilage (so called osteochondritis dissecans)
M KAPPE Deutsche Ztschr f Chir 92, clxxv, 3
- An affection of the costal cartilage following infectious
disease D I PETRASCHIKOFF Westn Chir
progras obstar, 9, 49

- A case of curious deformity of the ulna following injury
H A T FAIRBANK Proc Roy Soc Med Lond 9,
xv, Sect Orthop 8
- Non union of the ulna after operation D M ATKIN
Proc Roy Soc Med Lond 9, xv Sect Orthop 8
- Disabilities of the hand and foot W A COCHRANE
Edinburgh M J 9, xxv, 97
- Mal deforming deformity of the left wrist R C DUNN
Proc Roy Soc Med Lond 9, xv Sect Orthop 8
- An anomaly of the first and second ribs J I O HURZ
Nederl Tijdschr Geneesk 9, lxxv, 26
- The ossification of the acromioclavicular and the significance
of the superior acromioclavicular tubercle in man G P ROSE
Chir d organs d mouvement 9, vi, 485
- A case of arthritis of the hip in a girl aged 9 years B W
HOWELL Proc Roy Soc Med Lond 9, xv Sect
Orthop 8
- Observations on osteo arthritis of the hip G PARK
Brit M J 9, 4, 539
- Dislocation processes in the center of ossification of
the tuberosity of the tibia W R BRADLEY Nowy Chir
Arch 922, 3
- A large process in the posterior part of the ankle ob-
structing movement of the foot C J B ARTHUR Ugebl
f Læger 922, lxxx
- The foot factor in the future of women II WILD
Nation's Health 922, iv, 520
- Modern footwear as a cause of fatigue, muscular
rheumatism and flat foot S D FAIRWEATHER J Roy
Army Med Corps, Lond 922, xxv, 7
- Accessory bone representing the 11th rib of the scapula
of foot R C FLETCHER Proc Roy Soc Med Lond
922, xv Sect Orthop 8
- The metatarsophalangeal syndrome of Koehler O
AUGERT Chir d organs d mouvement 922, vi, 569
- T cases of new metatarsal disease P B ROTH
Proc Roy Soc Med Lond 922, xv Sect Orthop 8

Fractures and Dislocations

- Fractures H R BLACK Internat J Surg 9, xxv,
300
- Calcium and phosphorus metabolism in patients with
fractures F F TIDWELL and R I HARRIS J Am M
Ass 922, lxxx, 854
- Fractures comparison of end results from the stand-
point of treatment G S FORMER Am J Surg 9,
xxv, 24
- Some remarks on the treatment of fractures T H
HARRISON Internat J Surg 9, xxv, 205
- The functional treatment of fractures of the long bones
and of contractures A W MEZEL Off Westn Chir
progras obstar, 9, 2, 65
- The management of fractures near joint P H KRELL
Chirz Cincinnati J M 92, xi, 54
- Fracture of the spine of the scapula N TAGG ACCIA
Rev Assoc med argent 9, xxv, 364
- An unusual case of retrosternal dislocation of the clavicle
A SCHLICKER Muenchen med Wchnschr 9, 2, lxxx
5
- Fracture separation of the lower humeral epiphysis
F D BAIR Practitioner 922, cent, 244
- Location of the elbow in the newborn hand Zentralbl
f Gynaek 922, lxxv, 3, 8

MISCELLANEOUS

Clinical Entities—General Physiological Conditions

On the relations of heredity and environment of constitution and condition t predisposition to disease L F BAKER *Canadian M Am J* 922 xii, 60

The dangerous disorders of the ductless glands W ECKHART *Northwest Med* 922 xii, 448

The recent evidence as to the nature of cold shock W B CANOBY *Northwest Med* 922 xii, 350

Preventive treatment of shock or anaphylaxis the treatment of shock or cold therapy, the treatment of the complications of shock G LYON *Arch de med chirug y special* 92 viii, 537

Anapnoeic and anapnoeic symptoms in septic and borderline conditions J WINTER *Beitr klin Chir* 92 cxvii

Surgical aspects of amebiasis K K CHATTERJI *Indian M Gaz* 922 lvi, 333

Simple and painless treatment of furuncles KUTNER *Deutsche med Wchnsch* 9 xlviii, 866

Malignant points of the face R J MULLAND *Med J Australia* 9 ii, 386

The classification, terminology and biology of tumors S G. v. KENTZLY *M J* 922, xi, 67

Progress in cancer research O LUDIN *Minnesota Med* 922 39

Has cancer pigimentary origin? G T BEATSON *Lancet* 922 ccc, 625

Recurrent venous thrombosis in carcinoma E ELLIOT, *J Am Surg* 92 lxxvi, 324

The secondary manifestations of malignant disease A PRINCE *Ann Surg* 922, lxxvi, 3 [22]

The causative relations of carcinoma V MANNING *Zentralbl f Chir* 922 xlii, 05

End results in cancer as influenced by type, situation, location, and age C H. M. ro *Ann Surg* 922, lxxvi, 308 [23]

Thyroid diseases and the malignancy of thyroid tumors I S KENNEDY *Lancet* 922, ccc, 702

What is accomplished with the surgical treatment of sarcoma? H KUTNER *Klin Wchnsch* 9 x, 4, 893

Serum, Vaccines, and Ferments

The scope of vaccine therapy C E JEVENS *Lancet* 922 ccc, 564

Results upon an abdominal parietal abscess cured by tuberculin J B GALLIGO *Sanz Arch espul de enferm d spar thier* 922 513

Blood

The effect of massage, heat, and exercise on the local circulation A W HENSLY *California State J M* 922, xi, 276

A new histology of red blood corpuscles and staining technique E L DREWY *J Indiana M Am* 922 xv 302

Chemical changes of the blood during immunization O L ROSENBLUTH O F KAPLAN, and A BERGMAN *Am J M Sc* 922, cxiv, 36

Pseudo-leukemic splenic anemia in infants C LOWRY *Bol Soc med chirug S Paulo* 922, 65

A study of the severe secondary anemia A E MARK *Minnesota Med* 922, 136

Blood transfusion SCHOTTEY *Zentralbl f Gynack* 922 xlii, 165

The use of desiccated blood serum in the selection of donors for transfusion W D GILL *Mil Surgeon* 922, h, 285

Direct transfusion of blood report of cases J S HOSLEY W T V OSMAN, and A I DOBSON *Arch Surg* 92 301

Blood transfusion an automatic method of citration at body temperature W B HILL *Lancet* 922 cccii, 50

Results of sixty-one cases of blood transfusion V PAUCHET *Bull Acad de med Par* 92, lxxvii, 684

Blood and Lymph Vessels

Report of case of primary intravascular tumor probably spindle-cell sarcoma A EDWARDS *Mil Surgeon* 922, h, 288

Notes on case of aneurism of the basilar artery E W WALKER *J Roy Army Med Corps, Lond* 92, xxxix, 16

Spontaneous rupture of the internal carotid artery ith hemorrhage from the ear R J HOWTER *Laryngoscope* 92, xxxii, 678

Traumatic erosion of an anomalous right subclavian artery through the posterior wall of the esophagus H M SCOVILLE *J Am M Am* 922, lxxix, 5

Aortic insufficiency J F WOODS *J South Carolina M Am* 922, xviii, 248

Aortitis, with special reference t syphilitic aortitis S B B CAMPBELL *Edinburgh M J* 92, xxxi, 09

Embolism of the abdominal aorta C F WILCOX *Canadian M Am J* 922, xi, 647

Mesenteric thrombosis—with report of t cases C B PARKER *Canadian M Am J* 922 xii, 605

Surgical Diagnosis, Pathology and Therapeutics

The tetanus bacillus as an intestinal saprophyte in man C TICE BARTON and J H BAUER *J Exper M* 92, xxxvi, 86 [24]

Experimental Surgery and Surgical Anatomy

Graft from woman ovary in the peritoneal cavity t rabbit, histologic examination of graft after four months VIGLIERA and LACHOWSKY *Bull et mmo Soc anat de Par* 922, xxi, 358

Roentgenology and Radium Therapy

Handbook of roentgenology for physicians H HINCKE and R ANDERSON Berlin Springer, 922

The planning and equipment of modern X ray laboratory H J ALKINS *J Radiol* 922, iii, 376

The new roentgen universal-exposure table of Hiedler A STEINIGER *Sch eis med Wchnsch* 922, h, 68 [25]

T elv months' experience with the Potter Bucky diaphragm V McDONALD *Med J Australia* 922, ii, 35

Roentgen ray studies of the nasolachrymal passage J B M CAMPBELL, J M CAMERON, and H P DOUGLASS *Arch Ophth* 922, h, 462

Problems of dental radiography A R EISENBERGER *Internat J Orthodont Oral Surg and Radiograph* 922 viii, 122

A roentgenographic study of developmental anomalies of the spine C G WINTHROP J Radiol 9 25 357

The roentgen diagnosis of the more important tumors of the lung bones B H NICHOLS Surg Gynec & Obst 9 22 357

Röntgenological interpretation in pulmonary abscess W H STEWART N York Stat J 31 92 273 303

The X ray diagnosis of diseases of the lungs G. GALVANI New Orleans M & S J 9 17 171

X ray findings and combination chest conditions of chronic galled cases. crum tuberculous C I FERNANDEZ Med Herald 922 214 266

The X ray in the diagnosis of pulmonary tuberculosis S W FULLER Boston M & S J 92 27 47

The normal stomach A I BURCH Arch Radiol and Electrotherapy 9 27 11

Cancer stomach J H D WATKINS Arch Radiol and Electrotherapy 92 27 11

The roentgenological aspects of achylia gastrica A W CHASE Am J Roentgenol 9 22 57

The roentgenological demonstration of ulcerated gastric cancer I SACRE Fortschrd d Geb d Roentgenstrahlen 192 22 35

A new method for the roentgenological exploration of the kidney—pneumonephrosis DRUGMAN, LAYTON, SIEBER and FORTZ KAUF J de radiol d electrol 922 360

Outlines the superior strand of the pelvis by means of the X ray H THOMAS Am J Obst & Gynec 9 257

The therapeutic value of the roentgen ray A U DRYANSON Ann Clin Med 9 47

Irradiation of carcinoma of the rectum J. L. LEBLANC Gynec 9 21 9

The roentgen treatment of frostbite J ROSENBERG Fortschrd d Geb d Roentgenstrahlen 9 22 366

A new instrument for measuring roentgen rays with direct indication and registration (new roentgenometer) R JALAN, MACHIDA and W. H. SCHER 922 171 8

Recent developments in radiotherapy R. H. W. CALIFORNIA STATE J M 9 22

The dosage and curative effect of roentgen rays on the central nervous system C. H. J. 922 171 8

High voltage X ray therapy R. H. W. NORTH CALIFORNIA STATE J M 9 22 366

Deep radiography C. H. W. NORTH CALIFORNIA STATE J M 9 22 366

Technical and clinical aspect of the new deep roentgenotherapy J. T. CARR Am J Roentgenol 9 22 366

The dosage of deep roentgenotherapy M. W. ZIEGLER (J) Arch 92 271 5

A report of deep X ray therapy as practiced in Germany R. T. PRYOR Illinois M J 9 22 366

On penetrating radiotherapy by X ray and radium R. PROCA Arch Radiol and Electrotherapy 9 27 11

Deep radiotherapy in the treatment of cancer C. CHANDRACHUD and P. DABOUC Presse med Par 9 22 366

The continuous roentgenotherapy of osteosarcoma K. M. JOHNSON Orono Med 22 171 3

Röntgenotherapy of intracranial passages following spinal anesthesia C. J. M. J. and C. ULLER Am J Roentgenol 92 22 57

Carcinoma of the stomach D. C. GREEN Am J Roentgenol 922 22 57

A case of Hodgkin disease treated with roentgen rays

for 14 years K. R. MCGHEE and R. C. VAN GELDER Arch Int Med 922 22 57

Statistics and technique in the treatment of malignant neoplasms of the larynx D. QUACK and F. M. J. Am J Roentgenol 922 22 57

Radiation therapy of hyperthyroidism W. O. DAVIS J Michigan Stat M Soc 19 22 57

The results of the treatment by radiation of inoperable carcinoma of the breast B. J. LEE Ann Surg 9 22 366

The treatment of pyoderma by the X ray W. L. ROSS Med Herald 922 214 266

The ultraviolet and X ray as physiological complement in therapy newly established clinical treatment C. M. SIMON Am J Roentgenol 922 22 57

Electrotherapy and the X ray I. ROSENBERG Report de med y chir 92 22 57

Studies in radium H. WATKINS Canadian M J 92 22 57

An apparatus for the purification of radium emanation C. F. WINTHROP J Radiol 9 22 57

The application of radium in disease of the skin F. C. HANCOCK Canadian Pract 922 22 57

Blood changes in myelogenous leukemia following radium treatment D. R. WATKINS Boston M & S J 9 22 366

The treatment of chronic rheumatism with special reference to radium L. L. ALBERT Cincinnati J M 9 22 366

The effect of radium on the normal tissues of the head and spinal cord of dogs and its therapeutic application E. P. WINTHROP J M Soc 19 22 57

and A. C. R. W. Am J Roentgenol 9 22 366

The treatment by radium of nasal polyps H. R. LEON Am J Roentgenol 922 22 57

Radium treatment of diseased tonsils C. F. ROBINSON Am J Roentgenol 9 22 366

The treatment of gonorrhea with radium I. A. C. Canadian Pract 9 22 366

Malignant glioma and their proper treatment A. L. W. C. W. H. W. Illinois M J 922 22 57

Considerations of the therapy of cancer S. L. W. Arch Radiol and Electrotherapy 922 22 57

Carcinoma of the esophagus, its performance of the most observations on radium therapy J. O. LEE and C. W. HANCOCK Am J M Soc 9 22 366

Carcinoma of the esophagus, which has remained cured for 12 and 14 years following radium treatment A. BUCH Deutsche med Wochenschr 922 22 57

Ultra short radiation A. J. P. J. Radiol 192 22 366

Industrial Surgery

Gastric ulceration in industry A. W. COLEMAN Ill Med 92 22 366

Meningeal and revulsal effect of injury suggested percent age base J. J. MONTGOMERY J Ill M Soc 92 22 366

Hospital Medical Education and History

The origin and scope of the modern state hospital C. A. B. N York M J & Med Rec 92 22 366

Some suggestions on the future of hospitals H. J. W. W. L. Lancet 9 22 366

Some of the recent advances in surgery H. R. DUNSTON Texas Med J M 9 22 366

Legal Medicine

- The legal status of physicians and sectarians. F. R. GARDNER. *Am M Ass* 92, 1917, 24.
 Mother not liable for services for adult daughter—compensation of expert witnesses. McClenahan vs. Hayes (Calif) 306 Pac. R. p. 454.

- The validity of the provisions of the narcotic drug act. F. J. BRYSON (Ola.) 305 Pac. R. p. 90.
 Validity of license to an physician. City of Redding vs. Dooner (Calif) 306 Pac. R. p. 465.
 Absence of attending physician in emergency—expert testimony. Brownrigg. Hoffman et al (W. V.) S. F. R. p. 49.

GYNECOLOGY

Uterus

- Frequency and clinical significance of displacements of the uterus. P. F. VANDER. *J Am M Ass* 92, 1917, 792.
 The diagnosis and treatment of genital prolapse. J. L. BROWN. *Clin Obst* 923, 112, 78.
 Uterine prosthesis. risk associated pelvic relation. C. C. ARNOLD. *Kentucky M J* 92, 352. [41]
 Three cases of an erosion of the uterus. R. W. MORRILL. *M J Press*, 923, 306.
 The significance of anastomosis of the uterine vessels as indicated by an arteriogram. Pearson. *J the terine artery and vein due to an aural bomb injury*. J. VOL. *Arch Gynec* 923, 37.
 Accidental perforation of the uterus. risk report of three cases. G. W. OULSHAMMER. *Am J Obst & Gynec* 923, 11, 276.
 The indications for total ablation in certain cases of rupture of the uterus. H. J. O. OULSHAMMER. *Zentralbl Gynec* 923, 11, 276. [41]
 I. Chondrosarcoma of the uterus and adnexa. I. VANDER. *Reform* 923, 11, 276.
 What is the relation of hyperemia to fibroid disease of the uterus. J. O. PULAN, I. A. BLITZ, and A. B. McGRATH. *Am J Obst & Gynec* 923, 11, 276. [41]
 Myometrium and radiation in the treatment of fibroids. G. W. MORRILL. *Am J Obst & Gynec* 923, 11, 276.
 Irradiation and coagulation of uterine fibroids. J. VOL. *Arch Gynec* 923, 11, 276. [42]

- A clinical and embryological report of an extremely early total pregnancy together with study of decidual reaction, intra uterine and ectopic. W. A. DONLAVO. *Am J Obst & Gynec* 923, 11, 276. [42]
 A contribution to the causation of adnexal hernia. Description of a rare case of incarceration of tubal pregnancy in an inguinal hernia. A. BERNARD. *W. J. Clin Med* 923, 11, 276. [42]
 Endometriosis and endometriomyoma of the ovary. W. BLAIR BELL. *J Obst & G* Brit Emp 923, 11, 276. [42]
 A voluminous dermoid cyst of the left ovary containing various tissues extirpated by total hysterectomy. A. C. LERO. *Seminars Med* 923, 11, 276. [42]
 A case of ovarian cyst opening into the splenic angle of the colon. A. J. BINGOGLIA. *Bol de la Soc de Obst & Gynec de Buenos Aires* 923, 11, 276. [42]
 Adenomyoma of the retrovaginal space and its association with ovarian tumors containing fatty material. A. DO ALD. *J Obst & Gynec Brit Emp* 923, 11, 276. [42]

- Potential adenomyoma of the endometrial type. their importance and their relation to ovarian hyperandrogenism of the endometrial type (perforating hemorrhagic cyst of the ovary). J. A. S. WINGO. *Arch Surg* 923, 11, 276. [42]

- Adenomyoma of the retrovaginal space associated with a large cyst arising from the endometrium. W. A. DONLAVO. *W. J. Clin Med* 923, 11, 276. [42]
 Results of the surgical treatment of long standing tumors of the adnexa. A. PROBYN. *Arch Gynec* 923, 11, 276. [42]

Internal Genitalia

- A case of diptheritis alvina. F. A. MACFARLAN. *Med Press* 923, 11, 276. [42]
 The successful treatment of chronic non-infectious vaginal discharges with tropane. I. HARRIS. *Am J Clin Med* 923, 11, 276. [42]
 The formation of an artificial vagina by the transplantation of a loop of intestine. LACOSTE. *J Obst & Gynec* 923, 11, 276. [42]
 A new method for the surgical treatment of congenital agnathia. U. CA. *Ann Ital di chir* 923, 11, 276. [42]
 A new method for the surgical treatment of congenital agnathia. U. CA. *Ann Ital di chir* 923, 11, 276. [42]

Miscellaneous

- No. on form of pelvic by hysterectomy and its treatment. F. D. BROWN. *M J Australia* 923, 11, 276. [42]
 A review of cases of ovarian tuberculosis. A special reference to the end results of operative treatment. R. PIZZANO. *Am J Obst & Gynec* 923, 11, 276. [42]
 Drainage of pelvic abscesses through the rectum. J. I. RAYMOND. *Internat J Surg* 923, 11, 276. [42]

Adnexal and Perit Uterine Condition

- Ectopic gestation. A subject to the patient and to the practitioner. C. R. ANDERSON. *J Iowa M Soc* 923, 11, 276.

- Irritant asperatory hypertension in gynecology. J V LORIO *Am J Obst & Gynec* 1932 iv 360 [44]
 The Douglas cyst in cancer. ALBERTY Lyon *chirurg* 9 xii, 479 [45]
 Penetrating mole and homo-epithelioma. J C. ARMADA, R P ESCALIER, and S MAIZA. *Bol de la Soc de obst y gynec de Buenos Aires* 19 1, 86
 Malignant chorionic epithelioma with hemorrhage into the abdominal cavity. ALBERTY Muescher read. *Wochenchr* 1932, lxxv 51 [45]
 Vascular mole and placenta previa. W H LOWMAN. *Brit M J* 1932 504
 Backache as related to gynecological and orthopedic conditions. W A BOND and R E SHERES. *J South Carolina M Ass* 9 xvii 30
 The etiology of sterility in the female, from an analysis of 500 case records. D MACDONALD. *Boston M & S J* 1932 cxxxvii, 307 [45]

- Some aspects of the problem of sterility. S R MERRILL. *Boston M & S J* 1932 cxxxvii, 315
 An appraisal of ovarian therapy. E. NOVAK. *Endocrinology* 1932 vi, 509
 The autotransplantation of endometrial tissue in the rabbit. V C JACOBSON. *Arch Surg* 1932, xlii
 A case of primary carcinoma of the female urethra treated with radium. L A FORRESTER and F W MURPHY. *Surg Gynec & Obst* 1932, lxxiv 355 [45]
 X ray treatment of hemorrhage, dysmenorrhea, and ovarian fibroids. I P HERNIMAN. *Med Times*, 1932, l, 343
 X ray and radium in conservative gynecology. A E. HERTZLER. *Am J Obst & Gynec* 1932, iv 303
 The value of radium in gynecology. J A McGARRY. *Therap Gaz* 1932, xlvii, 609
 Radium in the treatment of diseases of women. W H B. ALPHEA. *Canadian Pract* 1932, xlvii, 387

OBSTETRICS

Pregnancy and Its Complications

- Pre maternity work. J C WINTER. *Med J Australia* 1932 2, 325
 The use of carbohydrates in the nausea and vomiting of pregnancy. V J HARRIS and B P W. *Lancet*, 1932 cxxx, 649
 Treatment of hyperemesis gravidarum. G C H. McFERRIN. *California State J M* 1932 xx 3
 Eclampsia. commentary on the reports presented to the British Congress of Obstetrics and Gynecology. June 30 04. T W EDIE. *J Obst & Gynec Brit Emp* 9 xxi, 386
 The relationship of eclampsia to the other toxemias of pregnancy. G LINGGARD. *J Obst & Gynec Brit Emp* 9 2, xxi, 402
 A case of eclampsia illustrating the use of veratrine. A BOUTRY. *J Obst & Gynec Brit Emp* 1932 xxi, 43
 Treatment of eclampsia by cauterization. T C. STREYER. *J Obst & Gynec Brit Emp* 9 xxi, 46
 Premature separation of the normally implanted placenta. W D I. LESTON. *Ohio State M J* 1932 xxvii, 595
 Heart disease in pregnancy. S NICHOL. *J Am M Ass* 1932 lxxxi, 593
 Hemis during pregnancy. L HANCOCK. *Zentralbl f Gynec* 9 xvi, 397
 Sacralization of the fifth lumbar vertebra causing pain during pregnancy and the puerperium. A J GIBSON. *Bol de la Soc de obst y gynec de Buenos Aires* 1932 1, 8
 The complications of induced abortion. A P. VIGOR. *Bol de la Soc de obst y gynec de Buenos Aires* 9 1, 83
 Carcinoma and pregnancy. F WOLFE. *Zentralbl f Gynec* 9 xvi, 743
 Intra uterine death. L HOLLAND. *Brit M J* 9 589
 Fetal death due to toxemia. A L. McFERRIN. *Brit M J* 9 589
 Syphilis as cause of acute fetal death. J N. CRUCE. *MEYER. Brit M J* 9 591
 Placental changes in relation to fetal death. G I. STRACHA. *Brit M J* 9 1, 2, 394

- Fashionable sterility. J A. COHEN. *Med J Australia*, 1932 2, 354
 The diagnosis and management of occiput posterior positions. E L. CORVILL. *Illness M J* 1932, xlii 307
 A rare case of dystocia in twin pregnancy due to simultaneous podalic impingement. E. GALLO. *Obstet* 1932, xlv 73
 A case of rupture of the cord occurring during forceps delivery. W E. LEE and J S. LAMAR. *Lancet*, 1932, cxxx, 709
 Notes on selection in the course of labor. M. BOUTRY. *Med Press*, 9 cxi, 97
 Our present knowledge and experience concerning cesarean section. E P. DAVIS. *J Am. State M Soc* 1932, xii 35
 Cesarean section. J L. STRAUSS. *Practitioner* 1932 cix 14

Puerperium and Its Complications

- A new suggestion in the treatment of puerperal infection. J A. WALKER. *Med Press*, 9 2, cxi, 30
 Puerperal infection: its prophylaxis and treatment. W T. CHERRILL. *Med J Australia* 1932 2, 317
 Septic infection following abortion or delivery. A S. JAGGAR. *J Indiana M Ass* 1932 xv 393
 Anatomical lesions in puerperal infection. LOAN. *J de med de Bordeaux*, 9 xxi, 308
 Immediate repair of lacerations versus delay. A X. PIERCE. *Kentucky M J* 1932 xi, 390

New Born

- An interesting case of strangulated hernia in a new born infant. ROCHER and MAEST. *J de med de Bordeaux*, 1932 xxi 343
 Ant. natal intra natal, and neo-natal death causes, pathology and prevention. J B. BALLANTYNE. *Brit M J* 1932, 2, 583
 Neo natal death. T J. BROWNE. *Brit M J* 1932, 2, 590

Miscellaneous

- Conservative obstetrics. G M. BOND. *Practitioner* 1932 2, xxi 399
 Obstetrical asphyxia. R S. TITUS. *Boston M & S J* 1932, cxxxvii, 504

Labor and Its Complications

- The most common pelvic strictures and their clinical treatment. I. PIERCE. *Siglo med* 1932 lxx, 396

GENITO-URINARY SURGERY

Adrenal, Kidney and Ureter

- Excision of the suprarenal capsule in epilepsy K. WOLFFWITZ Fortsch d Med 9 21, 300
- The formation of the horseshoe kidney examinations of human embryos 35 years long K JARRY Medicus 31 May 9 24
- A case of double kidney and double ureter 11th review of the literature C M HANSEN, T H BROWN, and H A DYER Ohio Stat M J 9 21, 602
- Pathological complications with duplication of the renal pelvis and ureter (double kidney) W F BRASCH and A J SCHULL J Surg Gynec & Obst 9 22, 40 [47]
- The present status of renal functional tests N M KIRBY Ann Clin Med 9 4, 6
- The logical interpretation of the phallophal test and Ambard coefficient in certain disturbances of kidney function J J SCHULTZ and W A BRADSHAW Pennsylvania M J 9 21, 838
- Renal function and the amount of functioning tissue T AUST Arch Int Med 9 22, 375
- The question of renal decapsulation in acute injury to the kidney A HORNE Arch f Klin Ch 9 2, 22
- Pre-uremic used in pyelography and its effects upon the kidney L C TONO and S R THOMPSON J Urol 9 21, 24
- Supplimenting the diagnosis of some kidney and bladder disease by one of the cystoscope and X ray O J BLO HANSON M J 9 21, 45
- A review of series of kidney ves G I M KIRK Canadian J M 9 21, 20
- The congenital factor in chronic renal disease I WILSON J Am M W 22, 107
- Polycystic kidneys P B WARR An Fac de med de C n de Montevideo 9 21, 25
- Polycystic kidneys hypernephroma case report I WARR Kentucky M J 9 21, 60
- The clinical importance of vesicle infarction of the kidney P W WARR Am J M Sc 9 21, 286
- Two fatal vesicle infarctions of the kidney P I SICORA J Indiana M W 9 21, 26
- Renal tuberculosis D W MACKENZIE Canadian M W 9 21, 60
- Bilateral kidneys of the kidney and ureter Trif 2207 1909 Chir 9 21, 41
- Bilateral renal calculi case report O C R HANSEN M J 9 21, 25
- The diagnosis and treatment of nephroblastoma I C JACKSON and W C C R Am J Surg 9 21, 22
- Hematuria associated with nephroblastoma and pyelonephritis B R VERNER Acta chirurg Scand 9 21, 153 [47]
- The regulation from ion of the kidney in nephritis I M WARR Canadian M W 9 21, 60
- Certain phases of the brook nephritis problem H A CARR Northern Med 9 21, 27
- Hydrophorosis I R WARR Wisconsin M J 9 21, 22
- Leukoplakia of the kidney pelvis H L KRENNER Arch Surg 9 21, 22
- Some of the features of the symptomatology of pyelitis D J A MILLER Arch Pediat 9 21, 61
- The diagnosis and treatment of pyelitis J M M WARR Nebraska State M J 9 21, 48

- Treatment of pyelonephritis by pelvic lavage M H JONES New Orleans M & S J 9 21, 28
- Malignant papilloma of the kidney W E DARNALL and J KOSKOFF Am J Obst & Gynec 9 21, 273
- Primary squamous-cell carcinoma of the kidney as sequel of renal calculi H G WILSON Arch Surg 9 21, 156
- Renal extirpation in pyelitis R F WOLFFWITZ Germania med 9 21, 447
- A suppurative ureter with an abnormal orifice report of case W G H WARR J Am M W 9 21, 605
- Studies in renal catheterization H A KRENNER California Stat J M 9 21, 2 [49]
- The treatment of abdominal pain due to ureteral obstruction A J CHOWELL J Am M W 9 21, 2
- An experimental study of the ureter in nephrectomy report of clinical case of pyelitis R L LATOURNE J Urol 9 21, 57

Bladder, Urethra, and Penis

- A case of ectopic cancer operated upon according to the method of Maydl Berlin I R. THOMPSON Acta chirurg Scand 9 21, 33
- The action of benzyl benzoate and morphine on the esophageal sphincter W J STARR J Urol 9 21, 30
- A new procedure for the formation of sphincter of the bladder J GOLJANITSKY Nowy Char Arch 9 21, 53 [49]
- Food allergy cause of bladder pain W W HANSEN Ann Clin Med 9 21, 7
- A rare form of inflammation of the urinary bladder suppurating neoplasm T CRISTO Pulchra Roma 9 21, 22
- Errors in the cystoscopic diagnosis of tumors of the bladder and contribution to the subject of esophageal cancer and erythema L KRENNER Arch f Urol Chir 9 21, 7
- A case of inflammation of the urinary bladder in an 8-year-old girl I KRENNER Fortsch d Med 9 21, 25
- Concurrent calculus and diverticulum of the bladder J L CHOWELL and C B R CHOWELL J Urol 9 21, 85
- Vesical papilloneuroblastoma N G R WARR Arch Int Chir 9 21, 60
- Pituitary carcinoma of the bladder probably of alveolar origin C J WARR Arch Int Med Soc de Chir de Par 9 21, 24
- Pre-operative treatment of malignant tumors of the bladder by radium A J SCHULL and W F BRASCH Arch Surg 9 21, 334 [49]
- The end result of operations for cancer of the bladder W F LOWERY Ann Surg 9 21, 35 [50]
- Gonorrheal injuries of the urethra and their treatment R M FROST Nowy Char Arch 9 21, 31
- The treatment of gonorrheal urethritis in the male A H LUTHERGOTT Therap Gaz 9 21, 820
- Disease of the urethra and prostate cause of hematuria J FROST J Missouri Stat M W 9 21, 22

Genital Organ

- Hydrotic cyst of the site of the prepuce H W FLAGG and R F CHOWELL J Urol 9 21, 207

- The filtering scar R H ELLIOT Arch Ophth 9
h, 433
- Bilateral colobomata of the macula E R CHAMBERS
Brit M J 922, 1, 564
- Influence of trauma upon onset of interstitial keratitis
T H BURNER Brit J Ophth 922, vi, 415 [55]
- Neuropathic keratitis the results of focal infection
J W CHAMBERS Am J Ophth 922, v, 703
- Determining keratotomy S R CURRIE Am J Ophth
922, 697
- Fibrous scar (fibrovascular sheath) of the crystalline lens
E J LEEVY and M B LLOYD Am J Ophth 922,
706
- Methods of determining astigmatism of the crystalline
lens R C HILLENBRAND Ohio Stat M J 9 1919,
672
- Zonule protection in cataract extraction A E EWING
J Am M J 406 922, 1919, 7
- Phacocaps I HARRINGTON Arch Ophth 922, h, 448
- Hypocoerciveness to lens protein cataract operation
F H VANDERBEEK and A V LINDGREN Am J Ophth
922, 700
- Cataract extraction with iridectomy R P RAYMAKER
Indian M Gaz 922 191, 137
- The pathology of cataracts S R CURRIE Arch Ophth
9 2, h, 433
- The diagnostic use of the avial pigment in injuries
of the avial tract A C WOODS Arch Ophth 922
h, 441
- Cataracts, its etiology and treatment F J MCCABE
Rhode Island M J 922, 303
- Recurrent hemorrhages in the retina and vitreous of
young persons method of examination W C FENWICK
J Am M Ass 9 2, 1919, 939
- Observations on the significance of retinal hemorrhages
C O H WINSORVIT Brit M J 922, 1, 495 [53]
- Ear**
- Otolaryngology and the general practitioner G E
SMITHSON Minnesota Med 922 306
- Deafness A G WILCOX Md Surgeon, 922, h, 39
- Prevention of deafness E AMBERG Grace Hosp
Bull Detroit, 922, vi, 7
- The pathology and treatment of chronic catarrhal
deafness P G GOLDSMITH Laryngoscope, 922, xxvii,
696
- The origin of deafness in septic disease E PIERCE
Arch f Othrr Nasen- Kehlophth 92, cix,
- Is adult lip-reading orth while? A detailed study of
68 cases G BERRY Laryngoscope, 9 2, xxxii, 645
- Otic phlebitis without thrombosis B A RANDALL
Pennsylvania M J 9 2, xxx, 847
- Some phases of non suppurative otitis media J A
BARKITT Laryngoscope, 92, xxxii, 663
- Labyrinthitis secondary to suppurative otitis media
G E WOODHOLM J Michigan State M Soc 922
vi, 306
- The contra indication to the use of quinine and the
sulphates in the treatment of diseases of the middle ear
C E HANCOCK Colorado Med 922 xii, 85
- Colloidal silver iodide in the therapy of the ear nose
and throat M F MCCARTHY Laryngoscope, 922
xxx, 664
- A spontaneous occipital pneumocele of mastoid origin
cured by operation L REVENENO and A WOODS Bull
et mem Soc de chir de Par 92, xlviii, 997
- The interpretation of mastoiditis in unusual cases H
HAYS Am Med 922, xxviii, 500
- A case of encephalitis lethargica complicated by double
acute mastoiditis, with accompanying temporary blind-
ness R ALMOCK Laryngoscope, 922, xxxii, 672
- The surgical treatment of chronic mastoiditis J A
PRATT J Lancet, 922, xli, 434
- A new method of closing the eustachian tube in the
radical mastoid operation N H PIERCE J Am M Ass
922, 1919,
- Hysteria after mastoidectomy simulating brain abscess
E M SCHWARTZ N York M J & Med Rec 922, cxvii,
270
- A new paracentesis knife H DICKINSON Laryngo-
scope, 9 2, xxxii, 694

SURGERY OF THE NOSE, THROAT AND MOUTH

Nose

- A foreign body in the nose, two cases of impaction of
Buckner's style in the nasal fossa H KUNKE and A
RYLAND Proc Roy Soc Med Lond 922 xv Sect
Laryngol 5
- Intraosseous epiphloides L SWENSSON Medis J
9 730 [56]
- Polyps of the base of the skull W J W J REYNOLDS
Schmiedt d Gesehft f Othrr Hals Nasenkehlophth
Petersburg, 1922 [84]
- Nasal headaches F L WALKER J Iowa Stat M
Soc 92, xii, 170
- A contribution to the etiology of septic nose thrombosis
A A SCHWARTZ Laryngoscope 9 2, xxxii, 690
- A case of suppurative ethmoiditis complicated by orbital
cellulitis and acute suppurative dacryocystitis W DRA
Kewich M J 922, xii, 630
- The Trencher graft in the radical cure of frontal sinus
and maxillary antrum diseases its further application to
the nasal and gingival fistula J E SERRA Sarg
Gynec & Obst 9 2, xxiv, 181
- The role of the antrum of Highmore as focus of infec-
tion L C ROBERTSON J Med Ass Georgia, 9 2,
365
- Primary epithelioma of the antrum of Highmore W W
CARTER Ark J Surg 922 xxvii, 296
- A new surgical procedure for the relief of depression of
the nasal bridge and columella its further application for
the relief of hump and deflected noses the plastic treat-
ment of the epiphthic nose J E SERRA Laryngo-
scope 19 2, xxxii, 709
- A case of mesopharyngeal fibrosis involving the left
maxillary antrum and side of the nose removed by Moore's
lateral rhinotomy N RAYMOND Proc Roy Soc Med
Lond 922 xv Sect Laryngol 59
- A case of epidermoid epithelioma in the nasal fossa
cured by means of the X rays alone. MURRAY and
VOGEL J on chirurg 922 xii, 459
- Throat**
- A rare bony tumor (compact osteoma) of the left tonsil
H TELLEY Proc Roy Soc Med Lond 922, Sect
Laryngol 45
- The roentgen ray in tonsillar disease F L LEBERER
J Am M Ass 922, 1919, 30
- The treatment of tonsils by radiations from radium salts
instead of operation F H WILLIAMS Boston M & S J
922, cxxxvii, 4 2.

- Tonsillectomy. M F JONES. N York State J M 92, xxii, 30
- Tonsillectomy in the contagious diseases. E H PLACE. Boston M & S J 922, cxxxv, 434
- Indications for tonsillectomy in infancy and childhood is the modern tendency toward universal tonsillectomy justified? H HARRIS. Am J Dis Child 92, xxv, 204
- The tonsillectomy stamp—the instrumental prevention of inspiratory postoperative pulmonary abscess. W F MOORE. Laryngoscope, 922, xxix, 686
- Tonsillectomy stamp. W F MOORE. Laryngoscope 922, xxix, 692
- The cause of severe bleeding following tonsillectomy—case report. A D H WATTS. J Lancet, 1922, 2, clii, 449
- Diphtheria following tonsillectomy. F L SACOT. Nebraska State M J 922, ii, 318
- Three postmortem specimens of acute septic edema of the larynx. E D D DAVIS. Proc Roy Soc Med Lond 9, xv Sect Laryngol 56
- Cancerization of the larynx with acute edema. C VOGEL. Ann Arch f Otolaryng. Nasopharyng. 922, clii, 77
- Sclerosis of the larynx and trachea. G FORD. Arch ital di chir 9, 4
- Pseudolaryngeal gonorrhea. L L VILLONIA. Rev de med y chir 922, 79
- Resection of the superior laryngeal nerve in tuberculous of the larynx. D BIALO. Tuberkules, 92 [97]
- The removal of fibroma of the larynx by means of the Mackenzie forceps and nasal snare. E D D DAVIS. Proc Roy Soc Med Lond 92, xv Sect Laryngol 56
- Papilloma of the larynx. F SPENCER. Proc Roy Soc Med Lond 922, xv, Sect Laryngol 45
- A solitary papilloma of the left vocal cord showing early carcinomatous transformation. E A PIERCE. Proc Roy Soc Med Lond 92, xv, Sect Laryngol 6
- Intrinsic epithelioma of the larynx shown after laryngotomy. S THOMPSON. Proc Roy Soc Med Lond 1922, Sect Laryngol 46
- Plastic restoration of the laryngotracheal tube. C SCHWARTZ. Schweiz med Wchnschr 92, li, 336
- Month
- Oral disorders in pediatrics. S A CORRIE. Am J Dis Child 92, xvi, 60
- The surgical treatment of complications arising from the first wisdom tooth. P BLOCH and L MONTZ. Neue med, Par 922, xxx, 97
- Infections and inflammations of the erupting tissue of the teeth, gingivae, periodontal abscesses, osteitis, and alveolar process. H A POTTS. J Am M A 1922, xxx, 97
- Sakary fatal case report. S G DARTY. Lancet M J 922, xx, 589
- Carcinoma angiosarcoma of the tongue. report of case. B H FRY. J Am M Ass 922, lxxx, 15
- A case of circumscribed lymphangiosarcoma of the tongue. L N. TAYLOR. Med J, 922, 778
- Obiteration of the orifice. Incision permits after treatment of maxillary sinusitis by the alveolar route. R G RICHMOND. Rev de med y chir 922, 200
- Cancer of the mouth. J C BLOOMFELD. Northw Med 92, xii, 260
- Carcinoma of the maxillary antrum, Moore operation of lateral rhinotomy, recurrence, death. I MOORE. Proc Roy Soc Med Lond 922, xv Sect Laryngol 33
- Sarcoma (small-celled) of the right maxillary antrum. Moore operation of lateral rhinotomy (September, 1924), recurrence, pre-sternal gland (March, 97), margin of orbit, right lower maxilla (July, 98), right breast and axilla (August, 99), growth dispersed by radium. I MOORE. Proc Roy Soc Med Lond 92, xv, Sect Laryngol, 51
- Malignant disease of the soft palate removed by simple extracapsular preliminary ligature of the external carotid artery. A RYLAND. Proc Roy Soc Med Lond 1922, xv Sect Laryngol 50

FEBRUARY 1913

International Abstract of Surgery

Supplementary to
Surgery, Gynecology and Obstetrics

EDITORS

FRANKLIN H. MARTIN Chicago
SIR BERKELEY MOYNIHAN K.C.M.G., C.B., Leeds
PAUL LECENE, Paris

GEORGE DE TARNOWSKY *Abstract Editor*

DEPARTMENT EDITORS

DEAN D. LEWIS, General Surgery	ADOLPH HARTUNG, Roentgenology
CHARLES B. REED, Gynecology and Obstetrics	JAMES P. FITZGERALD, Surgery of the Eye
LOUIS E. SCHMIDT, Genito-Urinary Surgery	FRANK J. NOVAK, J., Surgery of the Ear
JOHN L. PORTER, Orthopedic Surgery	Nose and Throat

CONTENTS

I. Index of Abstracts of Current Literature	iii
II. Authors	viii
III. Abstracts of Current Literature	73 130
IV. Bibliography of Current Literature	131 144

Editorial communications should be sent to Franklin H. Martin, Editor 30 N. Michigan Ave. Chicago
Editorial and Business Offices 30 N. Michigan Ave. Chicago, Illinois, U. S. A.
Publishers for Great Britain: Baillière, Tindall & Cox, 8 Haverhill St., Covent Garden, London, W. C.

CONTENTS—FEBRUARY, 1923

ABSTRACTS OF CURRENT LITERATURE

GENERAL SURGERY

SURGICAL TECHNIQUE

Operative Surgery and Technique

- TAYLOR, F B, TIER, W I and AL ARIZ, W C
Improvements in Pre-Operative and Postoperative
Care 73
- MAIR, A Postoperative Adhesions in the Abdominal
Cavity 73
- CUTL, A B A New Technique for Performing
Perineal Prostatectomy 3
- WILKINSON, O The Present Status of Squint
Surgery A New Operative Technique 3

Anesthesia

- ROSE, F, and ELLINGER, Why Is the Escaping Blood
Dark Colored in Too Deep Narcosis 74
- BRENNER, The New Anesthesia Procedure of
Goss and Winkler 74

SURGERY OF THE HEAD AND NECK

Head

- FRIEDLAND, M O Surgical Operations on Gunshot
Wounds of the Skull and Its Contents During the
War 1914-1917 74
- LELLER, H I Infection of the basilar and Lateral
Sinus Report of Nineteen Cases 74
- RYDERMAN, L and WOLFE, G Spontaneous Oc-
cipital Pneumatocele of Mastoid Origin Opera-
tion, Recovery 75
- RICARDONI, A Infantile of the Hypophyseal Type
and the Argyll Robertson Sign Associated with
Tumor of the Thalamus Part of the Third Ventricle
Infiltrating the Optic Nerves But Not Involving
the Infundibulum or the Hypophyseal Region 76
- STANLEY, S A Case of Brain Abscess of Unusual
Etiology 76
- PARKER, Reconstruction of the Inferior Maxillary
Arch by Autoplasty 76
- DICK, W B Hardship and Cleft Palate Deformities
Some of the Types and Their Operative Treat-
ment 77
- VEAL, V The Operative Treatment of Complete
Double Hardship 77
- PICKLER, H A Large Operative Defect in the Pharynx
Covered by Primary Transplantation of
Skin Flaps 79
- WILSON, H Injuries of the Visual Tracts of the
Brain 5
- McKENNA, L L Atypical Operations on the Jaw
and Mouth for Malignant Growths 33

- BARNES, W S Cancer of the Tongue Pitfalls
in Diagnosis and Treatment 39

Neck

- TINKER, M B The Desperate Risk Gutter 79

SURGERY OF THE CHEST

Chest Wall and Breast

- BLOOMGOOD, J C Tumor of the Breast 80

Heart and Vascular System

- MILLS, H W Hydatid Cysts of the Heart with Re-
port of Case 80
- DEER, WILLIAMS, I I A Case of Suture of Punctate
Wound of the Ascending Aorta 80

Miscellaneous

- KIMMEL, E H Diaphragmatic Hernia—Non Tra-
umatic With Report of Four Original Cases 8

SURGERY OF THE ABDOMEN

Abdominal Wall and Peritoneum

- BEHLE, A C General Septic Peritonitis and Its
Treatment 8

Gastro-Intestinal Tract

- OLIVER, J C Hypertrophic Stenosis of the Pylorus 8
- GRAHAM, E A The Surgical Treatment of Syphilis
of the Stomach 83
- SCHUBERT, C L Gastric and Duodenal Ulcer 83
- CRILE, G W Gastric and Duodenal Ulcer and
Cancer 83
- PERMAN, E I Observations on the Histology and
Healing of Gastric and Duodenal Ulcer 84
- VAN HOOK, W The Problems and the Progress of
Gastric Ulcer Surgery 86
- WOOLLEY, G The Choice of Operation for Gastric
Ulcer 86
- STENGEL, M The Treatment of Callosus Gastric
Ulcer by Transcavitary Excision by the
Kruskal Method 87
- PETERSON, E W Acute Intestinal Obstruction in
Infancy and Childhood A Brief Review of
Fifty Five Cases 87
- O'CONNOR, J Acute Intestinal Obstruction 88
- SMITH, R Intestinal Foci of Infection 88

HILDEBRANDT, M. A. Two Cases of Rare Diseases of the Rectum 89

Liver Gall-Bladder Pancreas, and Spleen

DRESDEN, J. G. The Bacteriology of the Gall-Bladder 89

GATWOOD and POWERS, P. H. Cholecystenterostomy from an Experimental Standpoint 90

DRESDEN, E. Traumatic Pancreatitis 90

SCHWARTZ, C. T. Case Report—A Large Pancreatic Cyst 9

Miscellaneous

CLUTE, H. M. Subphrenic Abscess 91

SURGERY OF THE EXTREMITIES

Conditions of the Bones, Joints, Muscles, Tendons, Etc.

WUNDERLICH, A. Chronic Non-Suppurative Osteomyelitis in the Adult with Primary Total Necrosis of the Diaphyses 92

HARRIS, G. Hemorrhagic Osteomyelitis 9

MARSH, B. Primary Multiple Sarcomata of the Bones 93

RANDOLPH, R. L. Periosteal Sarcoma in Association with Osteomyelitis. Report of Three Cases 93

ROBERTS, M. H. The Pathology of Tuberculosis of the Joints. A Study from the Clinical Standpoint 93

FRANKLIN, H. A Muscle Angioma of the Deep Musculature of the Neck, the Rhomboides Minor Muscle 93

BRAIDEN, W. R. Ossification Processes in the Center of Ossification of the Tuberosity of the Thigh 94

HEALING, P. A. Actinomycosis from the Surgical Standpoint 9

Fractures and Dislocations

MITCHELL, A. P. Ununited Fractures Due to War Injuries. With End Results of Operative Treatment in 100 Cases 95

MICHAEL, W. J. The Davis Method of Reduction of Congenital Dislocation of the Hip Joint 96

Surgery of the Bones, Joints, Muscles, Tendons, Etc.

BRANDT, G. The Treatment of Acute Osteomyelitis 97

GALGHE, Osteotomy or Osteoclasis. Also Discussion of the Springer Operation 97

GOJARTSKI, I. A. The Surgical Treatment of Traumatic Pseudarthroses. I. New Methods of Operation 97

MONACO, A. Operative Measures to Alleviate Ankyloses 98

FRANKEL, J. The Origin and Treatment of Congenital Muscular Torticollis 98

HAMILTON, G. An Operation for Lengthening Bone 99

KNOWLEDGE, S. M. Experiments in Bone Transplantation 99

MACHON, L. A Contribution to the Study of Bone Transplantation 99

SURGERY OF SPINAL COLUMN AND CORD

GORDON, C. The Diagnosis of Traumatic Diseases of the Spinal Column and Insufficientia Vertebralis (Schwann) 99

BROWN, L. T. Beef Bone in Stabilizing Operations of the Spine 99

BONNEAU, A., LACROIX, J., and CHENET, L. A Case of Complete Section of the Dorsal Cord by Direct Contusion. An Anatomical-Pathologic Study 99

STEWART, T. G. Some Observations on the Symptomatology of Spinal Tumors and Compressions 99

ADAMS, A. W. and OTT, W. O. The Results of the Removal of Tumors of the Spinal Cord 10

ADAMS, A. W. and OTT, W. O. The Results of the Removal of Tumors of the Spinal Cord 3

SURGERY OF THE NERVOUS SYSTEM

LEWIS, D. and MILLER, E. M. Peripheral Nerve Lesions Associated with Fractures 101

OTT, W. O. Experimental Results of Cable Grafts and Tubes of Fascia Lata in the Repair of Peripheral Nerve Defects 101

STOFFORD, J. S. B. The Reuniting of Peripheral Nerves 101

LEWIS, E. A. On Solitary Fibrosarcoma of Peripheral Nerve Trunks, with Description of Case of Cystic Fibrosarcoma of the Median Nerve 101

GORDON, V. The Surgery of the Sympathetic Nervous System 101

MISCELLANEOUS

Clinical Entities—General Physiological Conditions 101

KIRCH, E. Observations on Cystic Xanthomas, Tumors and the Genesis of Xanthomas 101

SEA, MACDONALD, J. A. A Study in the Diagnosis of Cancer by Means of Serum Reactions 101

SEA, MACDONALD, J. A. A Study in the Diagnosis of Cancer by Means of Serum Reactions 101

Bacteraemia, and Venous

CHERRY, O. M. and GARDNER, E. The Galvanic Excitability of Motor Nerves Following the Parental Injection of Heterogeneous Serum 101

Blood

COLEMAN, A. A Simple Procedure for Testing the Circulation in Ganglion of the Extremities 101

Blood and Lymph Vessels

MONROE, S. D. The Conservative Treatment of False Aneurysms 101

SEVERY, L. and BLUM, P. A Case of Arteriotomy for Embolism of the Axillary Artery Followed by Complete and Definite Recovery 101

Experimental Surgery and Surgical Anatomy

KNOX, I. Pancreas and Organ Transplantation 101

MEYER, J. and IVY, A. C. Studies on Gastric and Duodenal Ulcer. The Relation of Epigastric Hernia to Gastric Ulcer—A Clinical and Experimental Study 101

Roentgenology and Radium Therapy

- KIRKLY, B. R. The Roentgenological Study of the Pathologic Gall Bladder 09
- LADD, E. S. The Treatment of Cancer of the Lap by Radiation 09
- FRANKLIN, G. E. Cancer of the Lap Treated by Electrocoagulation and Radium
- TADDEI, L. Carcinoma of the Tongue and Its Treatment with Radium

- FREER, O. T. Carcinoma of the Larynx Treated Locally with Radium Emulsions. A Clinical Report 1
- BAUDINGER, B. S. Technique and Statistics in the Treatment of Carcinoma of the Bladder by Radium 3
- BURNHAM, C. F. The Results of Treatment of Carcinoma of the Cervix With Statistics and Technique 4

GYNECOLOGY

Uterus

- BURNHAM, C. F. The Results of Treatment of Carcinoma of the Cervix With Statistics and Technique 4
- BRITTSCHNEIDER. Observations on Myoma and Accident 6
- BOWLEY, V. Remarks on the Scope and Technique of Myomectomy 6
- DE OTT, D. The Evolution of Hysteromyomectomy 16
- FRANK, R. T. Cancer in the Cervical Stump, Metastases in the Vermiform Appendix 6

Adnexal and Peri-Uterine Conditions

- BELL, W. B. Endometrioma and Endometriomyoma of the Ovary 7
- DE BRYNE, F. The Clinical Results of Ovarian Grafting 7
- DORLAND, W. A. N. A Clinical and Embryological Report of an Extremely Early Tubal Pregnancy Together with Study of Decidual Reaction Intra Uterine and Ectopic 7
- External Genitalia
- SMITH, R. R. Prolapse of the Female Urethra and Erosion of the External Urethral Orifice 8

OBSTETRICS

Pregnancy and Its Complications

- H. VOORN, L. Bleeds During Pregnancy 9
- SOLOVIEV, B. The Results of the Treatment of Eclampsia by the Dublin Method 9
- Labour and Its Complications
- POCNETT, A. V. Immediate Repair of Lacerations Versus Delay 9
- D. VAN, F. P. The Uterus After Cesarean Section 20

Puerperium and Its Complications

- LYNCH, F. W. Retroversion of the Uterus Following Delivery 20
- Newborn
- MURRO, D. and LUSTIG, R. S. The Diagnosis and Treatment of Intracranial Hemorrhages in the Newborn. A Report of Fourteen Treated Cases 20
- Miscellaneous
- STIMSON, C. M. The Influence of the Placenta on the Mammary Gland 20

GENITO URINARY SURGERY

Adrenal, Kidney and Ureter

- ROVINO, T. The Surgical Treatment of Nephritis and Acute Nephrosis
- DANIEL, W. L. Malignant Papilloma of the Kidney

Bladder, Urethra, and Penis

- POCNETT, K. M. The Pathology and Treatment of Fibrocystoma of the Urinary Bladder

Genital Organs

- BAUDINGER, B. S. Technique and Statistics in the Treatment of Carcinoma of the Bladder by Radium 3
- HARRIS, R. H. and THOMPSON, A. Carcinoma of the Prostate 3
- CHEN, A. B. A New Technique for Performing Perineal Prostatectomy 3

SURGERY OF THE EYE AND EAR

Eye		
WILKINSON, H. I. Jones of the Vessel Tracts of the Iris		37
WILKINSON, G. The Present Day Status of Squint Surgery A New Operative Technique	5	37
WOOD, D. J. Intra Ocular Cysticercus	5	37
WOOD, D. J. Ory of Long Duration	5	37
HANSEN, B. T. and HANSEN, F. H. The Early Development of the Corneal Tubercle A Study in Sit Lamp Microscopy	35	37
CHASLER, J. W. Neurophthalmitis the Result of Focal Infection		37
LEWY, E. J. and L. O. M. B. Embryonic Fibrovascular Sheath of the Crystalline Lens		37
MCCARE, F. J. Glaucoma, Its Etiology and Treatment		37
Ear		
ETTER, E. The Correction of Prominent Ears	7	37

SURGERY OF THE NOSE THROAT AND MOUTH

Nose		
DEAR, W. A Case of Suppurative Rhinoscleritis Complicated by Orbital Cellulitis and Acute Suppurative Dacryocystitis	35	37
Throat		
FRANK, O. T. Carcinoma of the Larynx Treated Locally with Radium Emanations A Clinical Report		37
Mouth		
PARTON, The Reconstruction of the Inferior Mandibular Arch by Autoplasty	70	37
D. von, W. B. Harelip and Cleft Palate Deformities Some of the Types and Their Operative Treatment	77	37
VEA, I. The Operative Treatment of Complete Double Harelip		37
PICCOLI, H. A Large Operative Defect in the Pharynx Covered by Primary Transplantation of Skin Flaps		37
LAD, E. S. Treatment of Cancer of the Lip by Radiation		37
FRANK, G. E. Cancer of the Lip Treated by Electrocoagulation and Radiation		37
T. LANG, L. Carcinoma of the Tongue and Its Treatment with Radium		37
McINTOSH, L. L. Atypical Operations on the Jaw and Mouth for Malignant Conditions		37
BARNARD, W. S. Cancer of the Tongue Pitfalls in Diagnosis and Treatment		37

BIBLIOGRAPHY

GENERAL SURGERY

SURGICAL TECHNIQUE

Operative Surgery and Technique	3
Anesthetics	3
Surgical Instruments and Apparatus	3

SURGERY OF THE HEAD AND NECK

Head	3
Neck	3

SURGERY OF THE CHEST

Chest Wall and Breast	3
Trachea and Lungs	33
Heart and Vascular System	3
Pharynx and Esophagus	3
Miscellaneous	3

SURGERY OF THE ABDOMEN

Abdominal Wall and Peritoneum	33
Gastro-Intestinal Tract	33
Liver, Gall Bladder, Pancreas, and Spleen	34
Miscellaneous	35

SURGERY OF THE EXTREMITIES

Conditions of the Bones, Joints, Muscles, Tendons, Etc.	35
Fractures and Dislocations	36
Surgery of the Bones, Joints, Muscles, Tendons, Etc.	36
Orthopedics in General	36

SURGERY OF THE SPINAL COLUMN AND CORD

	36
--	----

SURGERY OF THE NERVOUS SYSTEM

	37
--	----

MISCELLANEOUS

Clinical Estimates—General Physiological Conditions	37
Serum, Vaccines, and Ferments	37

Blood	37
Blood and Lymph Vessels	38
Surgical Diagnosis, Pathology and Therapeutics	38
Experimental Surgery and Surgical Anatomy	38
Radiology and Radium Therapy	38
Industrial Surgery	39
Hospitals, Medical Education and History	40
Legal Medicine	40

GYNECOLOGY

Uterus	40
Adnexal and Peri Uterine Conditions	40
External Genitals	40
Miscellaneous	40

OBSTETRICS

Pregnancy and Its Complications	4
Labor and Its Complications	14
Puerperium and Its Complications	4
Newborn	4
Miscellaneous	14

GENITO-URINARY SURGERY

Adrenal, Kidney, and Ureter	4
Bladder, Urethra, and Penis	14
Genital Organs	4
Miscellaneous	4

SURGERY OF THE EYE AND EAR

Eye	43
Ear	143

SURGERY OF THE NOSE, THROAT AND MOUTH

Nose	44
Throat	44
Mouth	44

AUTHORS

OF THE ORIGINAL CONTRIBUTIONS WHICH ARE ABSTRACTED IN THIS NUMBER

- | | | | |
|---------------------|----------------------|--------------------|-------------------|
| Adams, A. W. 3 | DeLorean, J. G. 80 | Lam, L. S. 09 | Peppers, P. H. 90 |
| Alvarez, W. C. 73 | Dryden, E. 90 | Leal, E. J. 27 | Renschon, L. 75 |
| Baumbach, W. S. 20 | Dubonville, J. F. 80 | Lewis, D. 103 | Rhodes, R. L. 3 |
| Barric, G. 92 | Ecker, E. 27 | Lheriot, J. 01 | Rodriguez, A. 76 |
| Barnes, B. S. 3 | Edwards, J. 14 | Lilla, H. I. 74 | Rogers, M. H. 03 |
| Beck, A. C. 8 | Estes, K. S. 20 | Santh, E. A. 05 | Ross, T. 74 |
| Behrendt, J. 14 | Ferguson, K. M. | Lynch, F. W. 20 | Rovsing, T. 2 |
| Bell, W. B. 7 | Foster, H. 03 | Lyons, M. B. 27 | Sackler, C. L. 83 |
| Bloodgood, J. C. 80 | Fraser, J. 95 | Maack, B. 93 | Schoen, L. 07 |
| Brown, F. 107 | Frank, R. T. 6 | Mar, A. 73 | Shaw, J. 100 |
| Brown, A. 101 | Frost, O. T. 2 | McArthur, L. L. 8 | Sibert, S. 76 |
| Brown, V. 16 | Friedland, M. O. 74 | McCabe, J. J. 17 | Schick, R. 88 |
| Brown, W. R. 94 | Gasper, E. 200 | McGee, E. R. 5 | Schick, R. R. 8 |
| Brown, G. 97 | Gatwood, 90 | Merrill, W. J. 96 | Salomon, B. 19 |
| Bretschneider, 6 | Gaughey, 97 | Meyer, J. 08 | Sandler, C. T. 9 |
| Brown, L. T. 10 | Gierke, C. 80 | Michon, L. 99 | Stratton, M. 87 |
| Brown, J. F. 05 | Goljantzik, I. A. 97 | Miller, L. M. 103 | Stuart, T. O. 04 |
| Brown, C. F. 4 | Gosson, V. 05 | Mills, H. W. 80 | Swann, C. M. |
| Caci, A. B. 23 | Grubbs, E. A. 83 | Mitchell, A. F. 95 | Tennant, L. |
| Charles, J. W. 27 | Haasler, B. T. 26 | Mosco, A. 08 | Taylor, F. B. 73 |
| Charr, O. M. 106 | Hawker, F. H. 26 | Moscow, S. D. 07 | Terry, W. I. 73 |
| Chate, H. M. 9 | Hamilton, G. 99 | Mason, D. 20 | Thompson, A. 23 |
| Correll, L. 104 | Hawkins, L. 19 | McCord, J. 88 | Thayer, M. B. 70 |
| Cummins, A. 07 | Herbst, R. H. 3 | Oliver, J. C. 8 | Van Hook, W. 86 |
| Cris, G. W. 83 | Herman, P. A. 95 | Ott, W. O. L. 04 | Van, V. 77 |
| Darrell, W. E. | Hickman, M. A. 80 | Pantach, 76 | Wardman, H. |
| Davis, L. F. 20 | Ivy, A. C. 08 | Peterson, E. 83 | Wardman, O. 25 |
| Davis, W. B. 77 | Kessler, L. H. 81 | Peterson, E. W. 87 | Wardman, A. 9 |
| Davis, W. 28 | Koch, E. 08 | Pickler, G. E. | Wood, D. J. 20 |
| De Baryne, T. 7 | Kurkin, B. R. 09 | Pickler, H. 70 | Woolery, G. 86 |
| De Ott, D. 16 | Kropf, S. M. 99 | Pickler, A. V. 9 | Worner, G. 75 |
| Dorland, W. A. N. 7 | Kross, I. 07 | | |

INTERNATIONAL ABSTRACT OF SURGERY

FEBRUARY 1923

ABSTRACTS OF CURRENT LITERATURE GENERAL SURGERY—SURGICAL TECHNIQUE

OPERATIVE SURGERY AND TECHNIQUE

Taylor F B Terry W I and Alvarez W C.
Improvements in Pre-Operative and Post-Operative Care. *J Am Med Ass* 9 Jan 578

A group of 1 patients, of whom 46 had had laparotomy and 65 an extra abdominal operation, the authors studied the incidence of pain and vomiting (1) those who had been purged before and after operation, (2) those who had not been purged before but had been purged shortly afterward, and (3) those who had not been purged before and who were given no enema or cathartic for at least four days after operation.

The omission of the pre-operative purge had no definite influence on the vomiting, but reduced the incidence of pain in abdominal cases from 75 to 4 per cent. Delay in giving the postoperative purge reduced the incidence of vomiting from 45 to 30 per cent in the abdominal cases and from 20 to 4 per cent in the others. In both groups there was more complaint of pain when the postoperative purges and enemata were withheld. Hence a number of patients will be more comfortable if given enemata as soon as they are needed, and in the expulsion of gas.

The authors conclude that cathartics should be withheld for as long after operation as possible. Only patients not given purges or enemata for a day after operation have showed ill effects, and several had spontaneous bowel movements. In the other cases an enemata the sixth day was effective.

WALTER C. BOKER, M.D.

Mayer A. Postoperative Adhesions in the Abdominal Cavity (Ueber postoperative Adhäsionen in der Bauchhöhle). *Zeitschrift für Geburtshilfe und Gynäkologie* 91 191

In 115 secondary laparotomies after gynecological operations showed the following result:

Of 115 cases of gynecological laparotomy 87 (75 per cent) showed adhesions and eight (7 per cent) showed no adhesions.

Of thirty seven cases operated on for the first time outside of the clinic, thirty-seven (100 per cent) showed adhesions, and of twenty three operated on for the first time in the clinic, fifteen (65 per cent) showed adhesions and eight (35 per cent) showed no adhesions.

The development of adhesions is dependent upon imperfect asepsis, incomplete hemostasis, and inaccurate peritonization of the tumors. The author does not accept the theory that there is a predisposition to the formation of adhesions at certain periods of life, or that adhesions are favored by a peculiar constitution such, for example as the asthenic habitus of Stiller. A striking fact in the cases reviewed was that in those in which pregnancy occurred between the laparotomy there were no adhesions.

In addition to perfect asepsis, accurate hemostasis and good peritonization, the following factors have been suggested as of importance in the prevention of postoperative adhesions: (1) the avoidance of painting the abdominal walls with iodine, (2) the infusion of human colostrum, and (3) the production of pneumoperitoneum. The close of the laparotomy. Mayer however has no objection to the use of iodine. With regard to the introduction of human colostrum that this has been done for many years, but decisive results have not been seen and adhesions are demonstrable by subsequent examinations with pneumoperitoneum and roentgenography even when there was no complaint of their presence. The production of pneumoperitoneum at the end of the laparotomy as considered by Mayer but not carried out.

In conclusion, attention is called to the difficulty of the diagnosis. Frequently there are symptoms of adhesions in the absence of adhesions, but there may be also adhesions without symptoms. The importance of the demonstration of postoperative adhesions with the aid of pneumoperitoneum and the X-ray is brought out with the aid of six very instructive illustrations.

HARRIS (2)

ANESTHESIA

Rost, T., and Ellinger: Why is the Escaping Blood Dark Colored in Too Deep Narcosis? (Weisheit ist bei zu tiefer Narcose das entweichende Blut dunkel gefärbt?) *Munchen med W. hsch.* 9 10 77

During operation under narcosis it is not very usual to see the blood suddenly turn dark, even when there is no obstruction to respiration. The authors studied this remarkable phenomenon in experiments on cats and found that it is due to methemoglobin.

This methemoglobin could be demonstrated in pure ether narcosis, in chloroform narcosis, and in mixed hydrocarbon narcosis. Because of these findings the authors are inclined to attribute the occasional appearance of hemoglobinuria and the anemia observed after repeated narcosis to the breaking down of the red blood corpuscles with thrombosis in the internal organs. The formation of methemoglobin does not take place during narcosis of short duration even when comparatively large quantities

of anesthetic is used. Methemoglobin remains demonstrable in the blood for some time, but at the end of twenty-four hours has usually disappeared.

DAVIS (2)

Behrendt: The New Anesthesia Procedure of Gasson and Wieland (Das neue Betäubungsverfahren nach Gasson und Wieland) *Zentralbl. f. Gynäk.* 9 21 2, 220

As claimed by Wieland, acetylene produces effects similar to those of laughing gas. Experience with it in 20 cases is reported. Acetylene mixed with oxygen is used. Anesthesia is produced in from one to five minutes and the waking occurs still more quickly. Unconsciousness, anesthesia and relaxation of the abdominal wall are obtained with suitable mixture. The heart and respiration remain unimpaired but the blood pressure rises somewhat. Salivation is prevented by morphine and scopalamine. No nausea does not develop. According to experience up to the present time, this anesthetic is harmless.

KUTVICKOFF (2)

SURGERY OF THE HEAD AND NECK

HEAD

Friedland, M. O.: Surgical Operations on Gunshot Wounds of the Skull and Its Contents During the War 1914-1917 (Ueber chirurgische Eingriffe bei Schussverletzungen des Schädels und seines Inhalt nach den Kriegserfahrungen 9 4-9 7) *Arch. Med. f.* 92 9

A series of sixty cases of penetrating gunshot wounds of the skull are reported, thirty-eight of which were operated upon by the author and twenty by other surgeons. An exploratory incision is indicated in every case of uncertain diagnosis if the bone is found to be intact, nothing further should be done. Small splinters of the lamina vitrea heal in smoothly; the presence of an intact external layer of bone.

When there are fissures penetrating the entire thickness of the bone, exploratory trephining is indicated. One or two trephine openings 3 to 4 mm in diameter make possible the examination of the lamina vitrea, the dura, and the subdural space (hematomata). If necessary the trephine opening may be enlarged with chisel.

In encephalitis and suppurative meningitis the trephine openings must be large. In ten cases of encephalitis and meningitis-encephalitis there were seven deaths. The clinical picture of acute suppurative encephalitis is very typical. After comparatively long period of well being protrusion of the brain occurs with high temperature and slowing of the pulse. The necrotic masses are then thrown off and the general condition improves, but after few days or weeks there is an aggravation of the condition; the high temperature and slowing of the pulse return, the protrusion enlarges, necrosis

tion occurs in the center and paresis supervenes. This is again followed by improvement and again by aggravation; the necrotization of the brain increasing circumference, and convulsions and death occurring after three to five recurrences. The foreign body is frequently the cause of the progressive encephalitis.

Of twenty-two patients, eleven recovered, three were benefited, and eight died. According to the statistics regarding 60 persons with injuries of the head, forty-three died on the battle field, forty-eight died in hospitals along the line of evacuation, two died in the reserve hospitals and only seven survived.

GILBERT (2)

LITTLE, H. L.: Infection of the Sigmoid and Lateral Sinus. Report of Nineteen Cases. *Surg. Gynec. & Obst.* 9 22 4, 5

The author reports a series of nineteen cases of infection of the sigmoid and lateral sinus observed at the Mayo Clinic during the past five years. These were selected from a series of more than 500 cases of mastoid disease in which operation was performed and more than 50,000 mastoidectomy cases examined in the Ear, Nose, and Throat Section. The patients have been divided for discussion into four groups.

Group I: Patients in whom involvement of the sigmoid sinus by phlebitis or non-obliterating thrombosis.

The jugular vein was not operated on primarily in any of the eight cases in this group. In three cases subsequent ligation was necessary because of the patient's condition.

The leucocyte count was relatively high except in three cases, in two, the condition was really less serious. One patient was extremely ill and had a

very virulent infection of the blood stream due to hemolytic streptococcus.

Blood cultures were positive in four cases while one, that of patient most critically ill, cultures were repeatedly negative. No two patients were infected with the same organism and no regular interval elapsed before the blood culture became negative.

The temperature was fairly typical of sepsis in five cases, and in three the patient was almost afebrile.

Choked disc occurred in three cases, being probably the result of general toxemia. Blood transfusion was used in three cases as supportive measure.

Two patients who were most critically ill had phlebitis without thrombosis.

Group 1. Patients with obliterating thrombosis. Of the seven patients in this group primary operation was performed on the vein in two because bleeding did not occur from the bulb end of the sinus. In three cases the operation was performed on the vein secondarily because symptoms and signs of sepsis developed during the postoperative course and the second operation bleeding did not occur from the bulb end. In one case the disturbance may not have been recognized at the primary operation. In the other two it may have resulted from injury to the sinus wall. In two cases, in which the vein was not disturbed, the patient had an uneventful convalescence. The blood counts are not high even in the presence of infection in the blood. The patient's general appearance seemed to be the best index of his condition.

In six cases the blood cultures were positive in one case no culture was made. The patient was all affected with different organisms. The temperature curve was quite characteristic in four cases, and in one it was definitely misleading. Two patients were early afebrile. Choked disc occurred in one case. This patient, as given transfusion because of low hemoglobin and the effect was immediately beneficial. In general, it may be said that the patients in this group were not so extremely ill as those in Group 1. No case was the vein resected.

Group 3. Patients who died without submitting to operation. The two patients in this group were so extremely ill and the infection was so overwhelming that operation was not attempted. A septic sore throat in one case made it difficult to determine the true source of the sepsis even in the presence of the ear suppuration. The other patient became mentally disturbed. The soft parts discolored when handled, and the site of the needle puncture for the blood culture began to slough in twenty-four hours.

Group 4. Patients who died and in whom the disease was not recognized clinically. Of the two patients in this group one showed the result of epiphysearthritis, operation having been delayed too long. The ear was examined ten days before death and the history was typical, but sinus infection was

not suspected because the patient was an extremis. After the patient had died the home physician gave the history of previous chills and high fever. The infected guinea pig died of military tuberculosis. The patient's blood was positive for hemolytic streptococcus.

The other patient had thrombosis of the straight sinus which probably accounted for symptoms suggesting brain abscess. Headache, drowsiness, and mental apathy may be caused by circulatory changes secondary to thrombosis of the straight sinus.

The three draw the following conclusions with regard to the treatment of involvement of the jugular and lateral sinuses.

Patients should be treated individually rather than by one routine surgical procedure.

Primary operation on the jugular vein is not indicated unless bleeding does not occur from the lower end of the sinus.

3. The operation on the vein may be safely delayed if both ends of the sinus bleed freely. In none of the cases was the vein resected.

4. Too much dependence must not be placed on laboratory findings. The patient's general appearance is a fairly reliable index of his condition.

5. Blood transfusion by the citrate method, with care to group the patient properly is a valuable supportive measure.

6. Unnecessary handling and examination should be avoided as they may interfere with convalescence.

7. Forced feeding, quiet pleasant surroundings, and cheerful nursing are important factors.

8. Patients with lung complications may recover.

9. Thrombosis of the straight sinus may cause symptoms and signs of brain abscess.

The prognosis may be regarded as fairly good if well directed measures and timely surgical interference are employed. T. A. HANDEL, M.D.

Reverchon L. and Worma, G. Spontaneous Occipital Pneumatocele of Mastoid Origin. Operation; Recovery (Pneumatocele occipitale spontané d'origine mastoïdienne: opération guérison). *Bull. et mem. Soc. de chir. de Par.* 9, série 997.

The other case was that of a soldier aged years who had depressed the size of fifty-cent piece in the right occipital region. Complaint was made of headache which began about six months after slight fall on the head without immediate serious results. A few months later the depression gave place to tumefaction which increased slowly to the size of mandarin orange. The swelling showed no signs of inflammation and was clearly an air cyst. It increased in size on effort and could be reduced by pressure. The X-ray examination showed the entire mastoid region to be filled with air. The vascular aspect was continued also over considerable extent of the conchal and the petrous portions of the temporal bone and the parietal and occipital bones. The mastoid on the opposite side showed similar cavities.

A large incision was made over the tumor and an osteoplastic operation filling the osseous breach. The osteoplastic fragments were done. The bottom of the cavity was formed by the internal table which was very irregular. The air collection was clearly subperiosteal. A tunnel communicating with the mastoid cavity was found.

In the authors opinion there had been spontaneous dehiscence of the external table which was thinned by the process of pneumatization and distended mechanically. The part played by the patient's fall on his head is problematic. The process was exclusively intraosseous and probably connected with some defect in development. The pneumatization of the mastoid was probably the direct cause of the pneumatocele.

Auray collected fifteen cases of frontal, and thirteen cases of mastoid, pneumatocele. The authors find that to date, including their own case, only twenty-nine cases of mastoid pneumatocele have been reported.

W. A. BRENNAN.

Riccardi, A. Infantile of the Hypophyseal Type and the Argyll-Robertson Sign Associated with Tumor of the Thalamus Part of the Third Ventricle Infiltrating the Optic Nerves But Not Involving the Infundibular or the Hypophyseal Regions (Infantile de type hypophysaire et signe d'Argyll Robertson avec tumeur développée au niveau de la partie thalamique du troisième ventricule et pénétrant les cônes optiques, mais envahissant pas la région de l'infundibulum ni l'hypophyse). *Bull et mem Soc med et hop de Par* 9, 21, 2, 33.

The case reported by Riccardi again raises the question regarding the symptoms which must be attributed to functional disturbances of the hypophysis and the infundibular region. The patient was a boy of 8 years with infantile of the hypophyseal type and diabetes insipidus. Growth had been arrested since the thirteenth year and for the past 6 years there had been intense thirst. Constant polydipsia was associated with the daily elimination of from 500 to 4,000 ccm of urine. The only eye signs as the Argyll-Robertson pupil. Constant intense headache, predominantly occipital, as associated with vomiting. Death resulted. Lumber puncture on the day of death showed that the cerebrospinal fluid contained urea, albumin, and lymphocytes. Polyuria persisted to the end.

At autopsy tumor adherent to the lateral walls was found in the superior thalamic part of the third ventricle. The growth reached its maximum in the optic layers, especially the right. Histologically the tumor was round celled sarcoma or perhaps gliosarcoma.

The hypophysis as found to be macroscopically normal histologically there was no trace of neoplastic infiltration but there were some slight hemorrhagic and lymphocyte invasion in the posterior lobe, especially in the central part. The pars intermedia, the stalk of the hypophysis and the infundibular region showed no changes.

Pressure from the tumor was exerted upon the tongue and the corpus callosum. The diabetes insipidus might have been the result of the second and/or indirect lesions of the posterior lobe of the hypophysis or of compression of the infundibulum consequent to disturbance of the circulation or ectricular hydrops.

The arrest of development establishes once again the fact that so-called hypophyseal disturbances may occur without any direct participation of the hypophysis itself and with very diverse encephalic localizations of neoplasms, although usually the latter are di-encephalo-mesencephalic. The anterior lobe of the hypophysis showed very little involvement.

The Argyll-Robertson sign in this case was quite independent of syphilis, all tests for this condition being negative.

W. A. BRENNAN.

Silbert, S. A Case of Brain Abscess of Occipital Ethology. *J Am M Ass* 9, 2, 1212, 1217.

Silbert reports a case of brain abscess resulting from the direct introduction of an infected foreign body into the brain.

Six weeks before his admission to the hospital, the subject, a boy aged 6 years, stumbled and fell on a stick. The resulting small wound on the left side of the face became infected and discharged considerable pus but healed in eight days. Four weeks before he entered the hospital the child began to complain of headache and had some fever. Three days before his admission the headache became so severe and the fever so high that he was put to bed. He then became delirious. When he was brought to the hospital he was in moribund condition. His head was retracted and there was marked opisthotonos. The right pupil was larger than the left, and both reacted sluggishly to light. There was marked stiffness of the neck and bilateral herring signs.

Autopsy showed a small, firmly healed wound about 1 cm in length on the left side of the face midway between the outer angle of the orbit and the external auditory meatus. On removal of the skull cap and reflection of the dura, the surface of the brain was found to be covered by thick purulent exudate. The left temporal lobe showed marked flattening of the gyri, and fluctuation as noted on palpation. Under this area a large abscess cavity filled with thick purulent material. The dura overlying the abscess showed perforation, and probe introduced into this opening led directly through similar perforation in the squamous portion of the temporal bone to an incision under the temporal muscle. In this tract several splinters of wood were found.

H. A. McKim, M.D.

Farbach. The Reconstruction of the Inferior Maxillary Arch by Autoplasty (Wiederherstellung des kieferbogens durch Autoplastik). *Zentralbl f Chir* 9, 21, 549.

The peculiar anatomical relationships of the inferior maxillary arch make healing difficult. As com-

pared with the peg method and the interpolation method Partsch believes the graft method with splitting open of the fractured ends is safer and more convenient because in the most varied positions of the fractured ends it makes possible the approximation of freshly bleeding bone surfaces, a condition favoring rapid agglutination and healing if chips from the crest of the ilium are used in the implantation.

In fifty-five of seventy-six cases operated upon complete healing in of the implant occurred. The numerous cases re-examined after several years demonstrated that the implant grows and unites completely with the arch of the inferior maxilla. A transplant examined histologically at the end of three weeks showed no regressive changes and presented fresh bony sprouts over its entire surface.

VALENTIN (72)

Davis, W. B. Harelip and Cleft Palate Deformities. Some of the Types and Their Operative Treatment. *Ann Surg* 9: 187, 1911.

Complete and incomplete unilateral harelip generally require the same plan of treatment. In the latter there is usually very little or no muscle tissue between the upper angle of the cleft and the floor of the nostril. Incomplete clefts are corrected into complete clefts.

In outlining incisions for the correction of harelip the method devised by Thompson has been found the most satisfactory. With sharp-pointed calipers the distance is measured from the mid point of the floor of the nostril to approximately the point in the same sagittal plane to which the free margin of the lip would come if it were normal. The upper point of the calipers being kept in place, the lower is rotated laterally to the vermillion border where a mark is made on each side. Incisions carried through the entire thickness of the lip at right angle to the skin surface and following the lines outlined will give surfaces for approximation. Before approximating the margins the upper lateral portions of the lip should be freed from the maxilla.

In complete single harelip and cleft palate cases the lip and alveolar cleft should be operated on first, usually between the tenth day and the third month. The cleft palate may be closed between the twelfth and the twentieth months.

A wide alveolar cleft is repaired by partially dividing the buccal side of the alveolar process, just posterior to the canine region on the opposite side. A greenstick fracture is then produced and the edges of the cleft are brought together after they have been denuded of mucous membrane. The margins are held by means of silver wire.

Closure of the remaining cleft of the palate is done by the Langenbeck mucoperiosteal flap-sliding method. An additional flap may be taken from the lower edge of the vomer if necessary. The margins of the flaps are approximated with interrupted sutures of No. 00 wire, as far back as the soft palate where one on each milk mattress is used. The remaining part is closed with black silk.



Application of the Thompson method of determining the points for the lines of incision for the correction of harelip.

In bilateral harelip cases the wide separation of the margins necessitates more extensive freeing of the lip from the alveolar process. Stay sutures of silk worm gut are used to relieve tension.

Incomplete union in the hard palate may be repaired by any one of three methods: (1) by making lateral incisions just within the alveolar process on each side, loosening the flaps, and approximating them in the midline as in the Langenbeck operation; (2) by the Lane flap method; or (3) by bringing part of the horizontal processes of the maxilla and palatal bones medially with their attached soft tissues.

FARROW E. HARRIS, M.D.

Voss, V. Operative Treatment of Complete Double Harelip. *Ann Surg* 9: 221, 1911.

The author reports a series of thirty-five cases of complete double harelip operated upon for the first time or retouched.

The premaxilla should not be excised as its preservation gives a projection to the upper lip. Voss operates first upon the lip, correcting the palate later. He closes the lip by two operations: first by pulling back the premaxilla, and second, by suturing the soft parts. The premaxilla is operated on at the age of two or three months and the lip is sewed one or two months later. The palate may be closed during the second year.

In the first operation the septum obstructs the pulling back but the projection of the nose depends upon its integrity. An incision about 3 cm. long is made behind the premaxilla along the lower edge of the septum and the pericardium elevated. A wedge of bone is removed with the forceps as shown in Fig. 1 and the premaxilla displaced downward and back.

The lateral edges of the premaxilla should be trimmed off before the displacement is effected. It is fixed into position by means of silver threads passed into the maxilla and the premaxilla on each side. In bringing parts of the lip together complete restoration is not attempted, the object being only to form a bond of the soft parts in front of

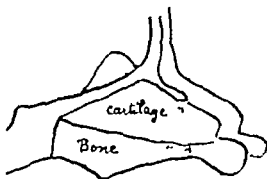


Fig. 1 Separation of three months-old child with complete double barrel lip.



Fig. 3 Suture of the skin completed

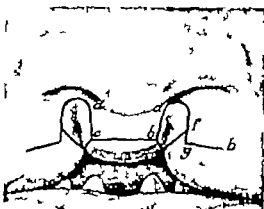


Fig. 2 Second operation. The skin incision.

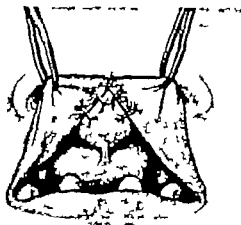


Fig. 4 Suture of the mucous membrane. Note the manner in which the platysma is included in the suture.

the drawn-back premaxilla. This means of fixing the premaxilla is much more important than the deep ligation with the silver threads. The two mucocutaneous edges are freshened and the skin is sutured. One large tension suture is put on the under surface.

The restoration of the lip is done in two operations. The qualities of a well restored lip are: (1) suppleness of the cutaneous parts, (2) rectangular mucocutaneous lines, (3) vitality of the muscles or phyltrum to insure the continuity of the orbicular, (4) projection of the mucosa without a notch in its lower edge, and (5) normal contour.

In the reconstruction of the lip the skin, muscle and mucosa must be taken into consideration.

The incision in the skin should be away from the mucosa to avoid the piece of mucous membrane that remains. The lip is nearly always too high because subsequently the atrophied phyltrum becomes larger.

The muscles should be brought together carefully to give suppleness to the lip.

The chief fault of the classical operation for the repair of the mucous membrane is removal of the mucosa of the phyltrum. It is the lack of mucous membrane that causes flattening of the lip.

The technique of making the skin incision is shown in Fig. The line *c* is situated with great care. It passes away from the mucous membrane part and only through the skin. The angles *b* and *c* are very clearly cutright angles.

At the level of the lower edge of the phyltrum all of the muscle is conserved.

The cutting of the lateral part is done in the line *f* which includes all of the mucous membrane and about 2 mm. of skin. It must be perpendicular to the direction of the lip. The incision will include the inner and outer mucous membrane.

When the bistoury arrives at the *f* it makes the line *f-g* which is 3 mm. long. This approaches the mucocutaneous line, but does not cut it.

The line *g-h* is drawn obliquely in leaving the mucous membrane.

The part included between the points *b* and *f* is removed with care to penetrate into the nostril in order to diminish the protruding of the nose. The result after the skin has been sutured is shown in Fig. 3.

In returning the muscles the finest catgut is used. Vascular silk is employed in the skin. In sewing the mucous membrane the finest horsehair is used.

The lower part of the phyltrum which is situated behind, must be sewed as shown in Fig. 4.

FRANCIS B. HANDEL, M.D.

Pickler H. A Large Operative Defect in the Pharynx Covered by Primary Transplantation of Skin Flaps (Grosser operativer Defekt im Rachen durch primäre Transplantation von Oberhautlappen gedeckt). *Zeitschrift für Chirurgie* 9, 214, 1910.

After removal, by means of the mouth, of squamous celled epithelium involving the left half of the

soft palate, the tonsil, and the left base of the tongue the lower part of the wound in the region of the tongue was covered by Thiersch graft taken from the inner side of the upper arm. The flap was pressed into place by means of a rubber upper dental plate and a lump of dental compound to which it had been made fast with mastoöl. The wound surface on the outside.

Healing was uncomplicated, and at the end of four days the grafts had healed in over almost all of the wound. This procedure which Pickler applied to the soft palate in two previous cases, is based on the conversion of the flat wound, in which the fixation of Thiersch flaps is impossible, the mouth into a cavity. *KNOX (7)*

NECK

Tinker M. B. The Desperate Risk Goller. *J. Am. M. Ass.* 9, 1333, 20.

This report is based on 1,000 cases selected from a series of 1,318 which were under observation from May 9, 1904, to May 31, 1911.

The author has found that persons with obstinate gastro-intestinal symptoms, hypertension, and myocardial insufficiency are especially desperate risks. When nausea and vomiting apparently resulted from thyroid toxicosis alone and resisted treatment, the patient died. These cases are relatively rare but Tinker has seen four. For the past ten years he has not operated on cases with marked gastro-intestinal symptoms. He does not consider as favorable for operation any patient with hypertension whose pressure cannot be reduced thirty points, and he has not operated on any with pressure over 100. Preliminary medical treatment is of greatest importance in these cases and local anesthesia is safest for operation. In cases with myocardial insufficiency digitalis should be pushed to effect. Thus, with general care usually brings such improvement that operation is comparatively safe. Glycosuria with hyperthyroidism is a serious combination. When it is possible to get the patient sugar free he progresses extremely well after thyroidectomy and frequently remains sugar free without very strict diet.

Local anesthesia is indispensable in the removal of goiters causing obstruction to respiration. The doctor does not accept the statement that any case of malignancy of the thyroid which is so far advanced that diagnosis is possible is hopeless for operation. Two of his cases of this type have remained cured one eight years and one more than ten years after the excision of extensive malignant processes involving the great vessel sheath, the larynx and the trachea as well as the thyroid.

In conjunction with the metabolic rat and tachycardia Tinker attaches considerable importance to lymphocytosis in determining the risk in doubtful cases. He advocates preliminary ligation and in the cases of extremely toxic patients he comes to operation side wake in spite of preliminary preparation with morphine, scopolamine, the ligation of the

psychic element by light nitrous oxide-oxygen anesthesia combined with local anesthesia. The many stage operation which can be stopped and the wound packed with gauze whenever there is doubt as to

whether it can be safely completed is not ideal, but it saves life in desperate cases. Tinker does not advocate the use of radium or the X-ray in the treatment of hyperthyroidism. S. J. SANCHEZ, M.D.

SURGERY OF THE CHEST

CHEST WALL AND BREAST

Bloodgood, J. C.: Tumors of the Breast. *Northeast Med.* 1914, 22, 325

After thirty years of investigation the author finds tumors of the breast as fertile a field for study as ever. The problems are (1) to give the patient with cancer the best chance of cure, (2) to save the breast in cases of benign tumor and (3) to determine the cases in which operation is contra-indicated entirely. Formerly Bloodgood felt that he was confronted with a diagnosis which called for no operative interference in less than 1 per cent of breast cases but today finds operation indicated in only 50 per cent of cases. Thirty years ago majority of cases had a definite lump and in 90 per cent the lump was malignant.

A discharge of blood from the nipple is not of itself a sign of cancer and the breast should not be removed because of this symptom alone. Pain in the breast is not a sign of cancer when it is unassociated with other evidence.

Lactation leaves its effect on the breast in dimples which may be mistaken for evidence of cancer. A small tumor which is visible in a moderately normal breast is usually malignant. The average breast is lumpy. It is most lumpy at puberty and very lumpy during pregnancy.

In surgical exploration of a tumor the author cuts down on the tumor instead of excising it. In doubtful cases the diagnosis must be made at the time of operation by inspection and frozen section. The working rule when there is doubt as to the character of a tumor is to do the complete operation for cancer. In cases of blue dome cyst the cyst alone should be excised as in cutting out other cysts and dilated ducts are encountered. Failure to find palpable lump easily when cutting down is suggestive of malignancy. S. J. SANCHEZ, M.D.

HEART AND VASCULAR SYSTEM

Mills, H. W.: Hydatid Cysts of the Heart with Report of a Case. *Surg. Gynec. & Obst.* 1914, 18, 455

The case reported was that of a woman 36 years of age who was found dead. Autopsy revealed a hydatid cyst of the right ventricle 5 cm in diameter which showed the typical laminated cyst wall. No daughter cysts or scolices were found. The substance of the right lung on the inner side of the lower lobe were four cysts the size of walnuts. The left lung was normal.

A primary hydatid cyst of the heart is formed by an embryo which has surmounted both the hepatic and pulmonary defences. Because of its location this cyst ruptures early. The primary rupture is usually not fatal and passes unnoticed. Secondary metastases in the lungs or brain result from flooding of the venous or arterial circulation with hydatid sand, embryo capsules and scolices. Hydatid cyst of the heart has never been diagnosed during life. H. A. McKENNA, M.D.

Daherelidze, J. L.: A Case of Suture of a Puncture Wound of the Ascending Aorta (Ein Fall von Naht einer Stichverletzung der Aorta ascendens). *Manuscript*, Petrograd, 9.

The author's case represents the first operation for puncture wound of the ascending aorta.

The patient, laborer 40 years of age, was brought into the hospital in an intoxicated condition. On his large number of incised wounds on various parts of his body. His pulse was 90. The heart boundaries and dull areas are normal. There was no pneumothorax or hemothorax.

The wounds on the temple and wrist were sutured. At the left of the sternum at the level of the first intercostal space and the second rib, a wound 3 cm long. When this was held open, a 3 cm bleeding wound of the sternum was exposed.

The patient's condition grew progressively worse. One hour after admission peculiar sound was heard on auscultation of the heart. Respiration was disturbed, and there was tympanic sound at the site of cardiac dullness. Signs of accumulation of blood and air in the pericardium are noted which suggested injury of blood vessel within the pericardium. The site of the external wound indicated an injury of the ascending aorta, the pulmonary artery, or the heart.

The patient was operated upon under ether anesthesia eight hours after the injury. The wound was enlarged down and around to the left with the formation of skin and muscle flap and the resection of pieces of cartilage from the second and third ribs and of pieces of the sternum. The layers of the pleura, which were uninjured, are pressed close with blunt instrument. The wound as found to penetrate the fatty tissue of the mediastinum. When the pericardium was split lengthwise blood, bubbles, air and froth were evacuated. The right atrium and the site of convergence of the aorta were then exposed on the right the pulmonary artery was visible. On the anterior surface of the aorta, 1 cm from the heart, and situated at an angle to the longitudinal axis of the aorta was a wound

8 mm long from which blood flowed in thin stream. When the second suture was attempted there occurred from the puncture channel heavy bleeding which could not be stopped by tamponade for two minutes and led to the formation of a hematoma under the adventitia. Two more button sutures, which included the hematoma, caused complete hemostasis. The sutures in the aorta held well. The pericardium was washed out and sutured. Uneventful healing followed. During the first few days following the operation the temperature went up to 38.1 degrees C. The pulse was 60-64. At the end of four weeks the patient was discharged cured.

The author refers to the work of Perthes published in 1897 in which were cited twelve cases of wounds of the aorta not followed immediately by death. He considers it both possible and necessary however to treat wounds of the aorta at once. He points out the difficulty in diagnosing this type of injury as well as injuries of the heart, and states that only the situation of the external wound, the peculiar sound, the progressive deterioration of the patient's general health, and the respiratory difficulty in the absence of signs of injury to the lungs, led him to suspect an injury to the organs within the pericardium and to operate.

In the exposure of the heart the author favors progressive widening of the channel of the wound with resection of the ribs and of as much of the sternum as necessary. On the basis of five cases of cardiac injury on which he operated with favorable results, he recommends complete closure of the pericardium and the pleura if possible, an extra-pleural operation should be done.

In the case of injury to the aorta which is reported there were a number of circumstances which favored a good result. The wound was small and partly protected by thrombus which prevented severe bleeding, the sutures held well, and an extra-pleural operation was possible. SCHLACK (22)

MISCELLANEOUS

Kessler, L. H. Diaphragmatic Hernia—Non-Traumatic. With Report of Four Original Cases. *J. Missouri State M. Assn.* 1910, xix, 46.

Congenital diaphragmatic hernia is infrequent. Its clinical history may so simulate that of other conditions that it may not be diagnosed during life. Imperfect development is probably the primary factor.

The hernial opening may be at any point in the diaphragm. The author had two cases with abnormally large openings for the esophagus and two cases with openings through the dome of the dia-

phragm. Cases have been reported also in which the opening was in the right or left side of the diaphragm.

Pain is usually present in the chest. The percussion note is resonant and the breath sounds are absent. There may be dyspnea, regurgitation of food, or vomiting. Gastrointestinal symptoms may be absent. The chest shows no change in appearance.

The hernia may become partially strangulated. Viscera may pass into and out of the thoracic cavity. The condition is not fatal unless strangulation occurs. The X-ray is the important factor in the diagnosis.

Few cases are found in the literature. The author reviews those reported during recent years. Most of them were diagnosed by the X-ray or at postmortem examination.

Case 1. A man, aged 7 years, had always been troubled with shortness of breath. This was especially noticeable after eating. A feeling of oppression or of pain in the epigastric region followed heavy meal or the drinking of a large quantity of fluid. There was no history or sign of injury. The chest and abdomen appeared normal. The breath sounds were absent in the lower left chest. The condition was diagnosed as pneumothorax. X-ray examination showed an enlarged esophageal opening in the diaphragm and the presence of about half of the stomach in the chest.

Case 2. The patient was a man, 9 years of age who complained of shortness of breath and irregular heart action with pain which was brought on by exertion and heavy meals. There was no history or sign of injury. The chest and abdomen appeared normal. X-ray examination showed displacement of the heart toward the right, the presence of about one fourth of the stomach in the chest, and an opening in the diaphragm in from the esophagus.

Case 3. A man, aged 40 years, complained of feeling of fullness and occasionally an acute pain in the epigastrum after meals. The attacks of pain were associated with marked dyspnea. Vomiting usually gave relief. There was no history of injury. X-ray examination showed one half the stomach in the chest.

Case 4. The patient, a woman, aged 6 years for many years had had feeling of fullness after eating and retrosternal pain which was relieved by vomiting. The first meal of the day seemed to cause the most severe pain. X-ray examination showed that the stomach had entered the chest through the esophageal opening. Under the fluoroscope the barium first appeared above the diaphragm and caused acute distress. It then began to pass below the diaphragm, taking the stomach with it. Twenty minutes the stomach was in its normal position. Two years after the operation the patient was still in good health. WALTER C. BOWLER, M.D.

SURGERY OF THE ABDOMEN

ABDOMINAL WALL AND PERITONEUM

Behle A. C. General Septic Peritonitis and Its Treatment. *Verhandl Med* 9 2, 1911, 36

The author quotes statistics that show that there has been a steady reduction in the mortality of general septic peritonitis.

In the treatment ether may be used as a cleansing agent. Its beneficial results depend, not upon an antiseptic effect, but probably upon an irritating action which, according to Dubé, causes hyperæmia, increases peristalsis, and exerts a general tonic action.

Complicated oil has been injected with the idea of preventing rapid absorption.

In Willis' opinion ascites is not an important factor in peritonitis. It therefore opposes routine alkaline therapy.

Fromme and Melcher state that the first bacteria taken up by the lymph cause coagulation and block further passage of bacteria and lymph. Hence intestinal nourishment does not enter the blood vessels, and rapid exhaustion, dryness of the tongue and great thirst result. These conditions are combated by the administration of fluid.

Bolton states that contractions of the diaphragm with concomitant changes in the abdominal and thoracic pressure of the lymph flow. Therefore posture and dress affecting respiration and the diaphragm are of importance.

Koch regards the omentum as an important barrier to peritoneal exudate formation, and absorbing agent. The exudate is protective and possesses bactericidal properties.

In gonococcal peritonitis associated with tubal infection operation is contra-indicated.

The author contrasts present day treatment with that of twenty-seven years ago. Formerly large incision, with often third or fourth incision, was made, then the margin was sought for exudate, the bowels were turned out, and it was wiped dry.

Today the gut was milked, an enterostomy was done, or the bowels were punctured to evacuate the gas, and the abdomen was irrigated, sometimes permanent irrigation being established. These procedures took time and sapped the patient's strength. Consequence: prolonged and recovery seldom resulted.

The treatment given today consists in early eradication of the source of infection, small incision, and gentle removal of pus and exudate, the gut being kept within the abdomen as much as possible. In cases operated upon early, the abdomen is closed, whereas late cases are wallied off abscesses or drained. The operation is brief and the quantity of anæsthetic small. The patient is rested in sleep before and after the operation, and rapidly regains strength there is less after treatment, the wound heals by primary intention, and the patient is up

and about in seven to fourteen days. Cathartics are avoided when appendicitis is suspected.

The author makes the following summary:

When peritonitis is suspected give nothing by mouth and no cathartics operate as early as possible to remove the source of infection, do no more than is necessary to eradicate the source of infection and do not damage the peritoneum. In early cases do not remove the exudate (coarse foreign material due to perforation of the stomach or large rent in the colon should be removed) and do not drain. Place the patient in Fowler's position. Overcome toxæmia by subcutaneous and rectal infusions of normal saline. Overcome dehydration by the rectal administration of tap water or 5 per cent glucose and 5 per cent sodium bicarbonate solutions. Apply heat over the abdomen by thermophore. Support the circulatory system by cardiac stimulation. If necessary give morphine to quiet the patient and control peristalsis. WALTER C. BURGER, M.D.

GASTRO-INTESTINAL TRACT

Oliver J. C. Hypertrophic Stenosis of the Pylorus.

J Surg 9 1911, 444

Congenital hypertrophic stenosis, as first described in 1885. Perhaps the best of the earlier papers on this subject was that published by Hirschsprung in 1885.

The condition must be differentiated from stenosis due to carcinoma, cicatricial contraction following ulcer, hypertrophic gastritis, syphilis, and tuberculous ulcers.

The case reported by the author as that of man 5 years of age, who first consulted him in 1906, because of symptoms of pyloric obstruction. The X-ray revealed pyloric obstruction and dilation of the stomach. Gastric lavage also showed marked gastric dilation and diminished acidity. On physical examination the patient was found to be cachectic. The abdomen was distended, its upper half and small hard mass, as palpable to the right of the midline at the level of the umbilicus. When the abdomen was tapped, periodic waves moving from the left to the right could be seen distinctly. The condition was diagnosed as carcinoma.

At operation smooth annular thickening about the consistency of cartilage, as found in the pylorus. There was no involvement of the mesenteric glands and no signs of cicatricial scars. The stomach was enormously dilated and the pyloric orifice tightly contracted. A typical Rammstedt operation was decided upon. A longitudinal incision made in the pylorus showed that the mucosa relieved the stenosis immediately.

Following the operation the patient, once begun to improve. That he has gained 40 lbs. All gastric symptoms have disappeared. The treatment in this case differs from that employed in other cases re-

ported in that only a Ramstedt operation was performed while in the others posterior gastroenterostomy was done. I. E. BROWNE, M.D.

Graham, E. A.: Surgical Treatment of Syphilis of the Stomach. *Ann. Surg.* 19, LXVI, 449.

It has been only recently that gastric syphilis has been recognized, with any frequency this being due largely to the Wassermann test and the development of gastric roentgenology. In the majority of instances, however, the diagnosis has been based on more or less indirect findings, such as the association of suspicious lesions with a positive Wassermann reaction, marked deformities of the stomach shown by the X-ray but without the corresponding cachexia and anemia of cancer, etc.

Graham has been unable to discover in the literature case of gastric syphilis in which the spirochetes were demonstrated. He does not discuss the diagnosis but in this connection refers to articles by Mills and Eusterman. The surgical complications include all those incident to ordinary peptic ulcer and those due to scar formation in the healing process. The most common conditions are: tenosis of the pylorus, hour-glass formation and other conditions due to perigastric adhesions, etc. Perforation and hemorrhage has also been recorded.

The literature reports thirty-one cases of gastric syphilis, which has been operated upon. Gastroenterostomy was done in seventeen cases and resection of the pylorus in four. The procedure in the rest is not stated. Because the data are incomplete or unsatisfactory, the results cannot be interpreted accurately. In general the cases were markedly benefited and there were only two deaths, one from septicemia and the other on the third day after operation. Equally good results were gained by resection and by gastroenterostomy.

The author reports three cases of probable definite gastric syphilis which he has treated in two of them presented type of lesion regarding which little is known. These are the cases in which there is moderate thickening of the entire stomach, which is reduced in size and absence of pyloric tenosis and gross deformity, such as hour-glass formation and extensive perigastric adhesions. The symptoms consist of vomiting, pain, loss of weight, etc. The cases had positive Wassermann reactions. In one case nothing was done but in the other two gastroenterostomy was done with some relief. In the other case, in which definite pyloric obstruction, pyloroplasty was done with entire relief of symptoms.

In those cases of generalized sclerosing of the stomach without origin, tenosis of the pylorus or hour-glass formation the benefit to be derived from surgery is doubtful. In the other cases resection of the pylorus gave uniformly good results when stenosis as present. While gastroenterostomy is frequently followed by only slight or temporary improvement, Graham concludes that on the basis of present experience pyloroplasty is the better procedure. O. S. PROCTOR, M.D.

Scudder, C. L.: Gastric and Duodenal Ulcer. *Iowa Surg.* 9, LXVI, 470.

This article is based on 53 cases of chronic ulcer of the stomach and duodenum treated by operation.

In the 7 cases of gastric ulcer the immediate mortality was 7.6 per cent.

The remote results in 48 cases are as follows: Ninety-nine of these patients are practically well while nine report symptoms similar to those preceding treatment. The length of time since the operation in these cases is as follows: one year, nineteen cases; two years, twenty-five cases; three years, thirty-three cases; four years, ten cases; five years, eight cases; six years, three cases; seven years, seven cases; seven years or more, four cases; fourteen years, one case and sixteen years, one case.

The operative procedures were: gastroenterostomy, forty-seven cases; excision alone, six cases; excision and gastroenterostomy, thirteen cases; cauterization and gastroenterostomy, fourteen cases; sleeve resection, three cases; gastrojejunostomy, one case; pyloroplasty, one case; division of adhesions, two cases and partial gastrectomy, twenty-one cases.

In the 30 cases of duodenal ulcer the postoperative mortality was 6.6 per cent.

The remote results in 29 cases are as follows: Ninety-eight of the patients were well. The time elapsed since the operation ranged from eight to ten years.

The operative procedure used in the duodenal cases consisted in infolding of the ulcer, the application of omentum to the peritoneal surface of the ulcer and posterior gastroenterostomy.

The general mortality for the entire group of 53 cases was 6.7 per cent. I. F. BRYAN, M.D.

Crile, G. W.: Gastric and Duodenal Ulcer and Cancer. *J. Surg.* 9, LXVI, 467.

Of 76 cases of lesions of the stomach and duodenum treated at the Cleveland Clinic and the Lakeside Surgical Service data on 560 are available. These include 89 cases of carcinoma of the stomach, five cases of carcinoma of the duodenum, two cases of sarcoma of the stomach, 50 cases of ulcer of the stomach, 300 cases of ulcer of the duodenum, and five cases of tumors of the stomach (undifferentiated).

In the early cases of this series the mortality was high but the improved technique and management, especially preoperative care, the mortality in the last 40 cases of gastroenterostomy and resection was 8 per cent. In simple gastroenterostomy the mortality was less than 1 per cent.

Of the 560 cases, 450 came to operation. The operations were as follows: eighty-one in stage and temporizing operations, 30 gastroenterostomies, and forty-eight resections of the stomach. Information has been obtained regarding 454 patients as follows:

PATIENTS LIVING AFTER OPERATION FOR DUODENAL AND GASTRIC CANCER AND ULCER

Condition	Under one year	One to three years	Three to five years	Over five years	Total
Carcinoma of stomach				6 including for 20 years for 15 years for 10 years for 5 years for 2 years	1
Carcinoma of duodenum					
Ulcer of stomach	27	19		10 for 20 years for 15 years for 10 years for 5 years for 2 years	56
Ulcer of duodenum	61	17		27 for 20 years for 15 years for 10 years for 5 years for 2 years	105
(Length of life undetermined)					

PATIENTS DYING AFTER LEAVING HOSPITAL

Carcinoma of the stomach—13 deaths		
Less than 1 year	3 (including 1 able cases)	rooper
1-5 years		
5-10 years		
Not known	7 (including 3 able cases)	rooper
Ulcer of the stomach—6 deaths		
Less than 1 year		
1-5 years		
Not known	3 (including 1 able case)	rooper
Ulcer of the duodenum— deaths		
Less than 1 year		
More than 1 year		
Not known	7 (including 1 able case)	rooper

A questionnaire sent to all patients operated upon more than one year ago, sixty-six replies were received. Eighty per cent reported that their symptoms are relieved, 85 per cent stated that they were able to resume their normal work in less than six months after the operation, 65 per cent had required no care for stomach trouble since their operation, 60 per cent reported subsequent treatment, 51 had gained in weight from 5 to 62 lbs., and 7 had had a definite loss in weight.

The study led to the following conclusions:

The operative mortality is now reasonably low.

The body as a whole, the presence of local infection or intoxication, and the patient's work, habits of eating, and food should be considered as well as the local ulcer.

3. The results of treatment are better in cases of duodenal ulcer than in cases of gastric ulcer.

4. A vicious circle is no longer seen.

5. The development of peptic ulcer is dependent upon the curative effect of the treatment. It is part of the disease rather than a result of the operation.

6. In general, the Sippy treatment should be tried first in the acute cases. If this does not give definite improvement in two weeks, operation should not be further delayed.

J. E. BARNARD, M.D.

PERMAN, E. Investigations on the Histology and Healing of Gastric and Duodenal Ulcer (Unter suchungen ueber die Histologie und die Heilung von Geschwulsten des Magens und Duodenalgeschwulsten). Act. Chirurg. Scand. 9, 1, 1915.

In an recently published work on the histology of gastric ulcer Askanazy contradicts the theory advanced by Rokitsansky and Hauser that the healing of the ulcer is due to shrinkage of the surrounding newly formed connective tissue, which causes the edges of the mucosa to approach each other and finally to coalesce. Askanazy distinguishes four layers in the structure of the tissues around the ulcer: (1) the exudate, (2) necrosis, (3) the granulation tissue, and (4) the connective layer. He believes that in the process of healing the granulation layer is of chief importance. Nielsen and Nicolaisen confirm this view. Wislansky and Nicolaisen also found the changes in the nerves surrounding the ulcer, which had been described previously by Perman, namely division of the nerves by the ulceration and perineuritic and neuritic changes.

Perman's material consisted of excised specimens and excised ulcers. Autopsy material is also known. The 1. Gerson stain is especially well suited for the demonstration of connective tissue. Not every ulcer shows all of the four layers.

The innermost layer (exudate) appears as a structureless zone filled chiefly with cell nuclei from leucocytes and formed by dead necrotic tissue, trypsin formed fibers, migrated cells, gastric epithelium and gastric contents.

The necrotic layer consists of necrotic washed tissue. When there is necrosis of the fibrous connective tissue intact red stained connective tissue trabeculae are visible.

The granulation layer consists of loose granulation tissue formed by young fibroblasts and contains newly formed capillaries which usually run straight and toward the ulcer. There is also an abundant infiltration of inflammatory cells, mostly lymphocytes, but also some leucocytes. This layer may have a level border or may show granulations penetrating into the ulcer. The surface of the granulation layer may be necrotic or normal and covered only by a layer of exudate. In the latter case the layer of necrosis is entirely absent, but it may have

separated and fallen off during or after the operation. Only a few cases showed the entire base of the ulcer covered by the granulation layer (the liver may be partly or completely absent).

1. The outward direction the granulation layer undergoes transition into the cicatricial layer which usually consists of dense fibillary connective tissue. This is the largest ulcer layer and forms the true ulcer tumor or induration. If the granulation tissue covers the base of the ulcer, the cicatricial zone is permeated by delicate vessels. The cicatricial zone often shows an accumulation of phagocytes, usually lymphocytes and plasma cells. As a rule the leucocytes are few in number.

There are two main types of ulcers, viz. those with and those without the typical granulation tissue. Of twenty-three gastric ulcers, thirteen belonged to the first group and ten to the second.

The healing of an ulcer proceeds as follows:

Young, multicellular connective tissue first forms around the acutely developed lesion, the deeper part of which are transformed, when the ulcer heals, into fibillary connective tissue. The portion toward the ulcer is changed into granulation layer in older ulcers. Such are surrounded by older fibillary connective tissue. granulation layer forms on the inner side of this connective tissue and then grows into the ulcer cavity whereas the newly formed fibillary connective tissue of the granulation layer is transformed into the cicatricial layer. In this way a large concentric filling of the ulcer results and is seen roentgenologically during the course of internal treatment (Oehndorf). According to the microscopic picture the greatest tendency toward healing is at the periphery of the ulcer. With the filling in of the defect and following it, the newly-formed connective tissue of the base of the ulcer is covered by the epithelium growing out from the edges of the mucosa. This occurs only if the granulation tissue covering the base of the ulcer is normal at least at the periphery as epithelium cannot grow over necrotic tissue. The absence of thickening of the gastric wall at the site of the scar after the healing of the ulcer is explained by the gradual disappearance of the excess connective tissue.

The most important factor in the healing of gastric ulcer is the new formation of connective tissue by the granulation layer in the base of the ulcer. It is hardly imaginable that thick deposit of dense fibillary connective tissue surrounding an ulcer should shrink any further or that callous gastric ulcer becomes obliterated merely by shrinkage of the surrounding connective tissue. The possibility that such an ulcer may become healed cannot be denied, however, as it is not unusual to see a patient with an ulcer found penetrating at the time of operation become entirely free from symptoms after gastro-enterostomy and remains well for a long time.

The differentiation of the two main types of ulcer with the microscope is of clinical interest. The presence of granulation tissue shows a tendency to healing in cases in which the entire ulcer surface

or a large part of it is covered by granulation tissue. The tendency to heal is good, and when the granulation is missing the tendency to heal is poor. A wide necrotic layer shows that the ulceration is in the process of rapid progression.

The comparison between the histologic picture and the history of the case particularly with regard to the duration and periodicity of the disease is of great importance. No conclusions can be drawn as to the duration of the clinical symptoms from the size of the ulcer crater and the tumor ulcer. Granulation tissue is seen in the base of the ulcer whether its duration has been long or short. I have reported the ulcer tumor consisted chiefly of young, newly-formed connective tissue and therefore had probably been formed during the last exacerbation. The presence of old connective tissue in the lateral portions of the tumor makes it very probable that the ulcer found at operation originated in the base of an older and more or less healed ulcer. The histories were of several years' duration, but the ulcers developed during a relatively short period of time. These three cases, and the fact that not rarely abundant granulation tissue is found in the ulcer in spite of the expected unfavorable histologic picture furnish pathologic-anatomical basis for the view that in a number of cases the ulcer heals more or less completely during the symptomless interval and that a new ulcer is responsible for the new symptoms.

The duodenal ulcer behaves similarly to the gastric ulcer. In three of five cases granulation tissue was completely absent in the two other cases it was present in few areas, but only in small amounts. Both gastric and duodenal ulcers were found in eight cases. These are characterized by acute inflammatory changes viz. edema, the infiltration of leucocytes, and the new formation of connective tissue. As a rule they show broad necrotic layer.

None of the perforating ulcers showed granulation tissue of the same type as that found in non-perforating ulcers. Usually these were surrounded by marked leucocytic infiltration. The distant tissues also showed large numbers of leucocytes, especially in and around the blood vessels. The connective tissue formation is most abundant in the subserosa where often marked deposit of newly formed edematous tissue consisting of young fibroblasts is seen. A frequent finding is edema and fragility of the tissue around the ulcer.

The severity of the acute inflammatory changes has no definite relationship to the time which elapsed between the perforation and the operation. The acute inflammatory changes are not the result of peritonitis due to perforation, but are caused by the ulcerating process and show that this was under going relatively rapid progression when the perforation occurred. The tissues around perforated ulcer may show either acute changes alone or both acute and chronic changes. The histologic picture is exceedingly variable, depending upon the conditions under which the ulcer perforates. It differentiates the presence of the frequently severe acute inflam-

matory changes from the pylorus usually seen in non-perforating ulcers. With perforation there often men acute developed ulcer or relatively rapid progression of the ulcerating process in a previously existing unhealed ulcer. A tendency of the ulcer to recur is also seen, and frequently recurrence at the site of a old perforation is likely.

J. V. L. ALLY, M.D.

Va. Hook, W. The Problems and the Progress of Gastric Ulcer Surgery. *Med. Pr.* 9, 1914, 194.

In Paterson's opinion the important factor in the healing (for gastro-enterostomy) is the discharge of all secretions into the stomach. He states that pyloric occlusion is unnecessary with gastro-jejunostomy and that gastro-enterostomy if a physiological operation is an effective treatment for ulcers of the body of the stomach as for pyloric ulcer.

Broett of the Hamburg Clinic states that both remote and immediate operation results should be taken into account when the indication for and the method of operation are considered and that a callosus ulcer at distance from the pylorus, even when it does not penetrate, should be treated by transverse resection procedure which produces more normal gastric relations. The most difficult transverse resection is nearly the same as that of gastro-enterostomy but the latter results are better. Billroth's second method should be used only when transverse resection is impossible and there is considerable difference in the width of the gastric stump.

In cases of ulcer near the pylorus and cases of ectropical pyloric stenosis gastro-enterostomy may be employed and occasionally may be combined with pyloric closure.

Opposition to transverse resection is based chiefly on the report of von Haberer however he reported 100 gastric resections by the first Billroth method in which there were no deaths and infections. Excellent results were obtained. He believes that this procedure more closely meets the physiological requirements than other operations. Thus he then has seen no recurrence of ulcer in his cases.

Gastro-enterostomy seems to cure large number of cases. Kocher believes that a correctly placed and properly functioning gastro-enterostomy permits and that the majority of cases the ulcer heals and the formation of new ulcers is prevented. Walsensky and Crahan are against gastro-enterostomy in the absence of pyloric stenosis.

The Mayo Clinic employs local excision of the ulcer or cauterization of its base.

Von Eiselsberg states that gastro-enterostomy is especially satisfactory in cases of pyloric obstruction. He calls attention, however to the relatively frequency of peptic ulcer of the jejunum after gastro-enterostomy in cases presenting insufficient objective findings. Von Eiselsberg pyloric exclusion combined with gastro-enterostomy promptly corrects the ulcer hemorrhages but is followed more fre-

quently by recurrence than simple gastro-enterostomy. After transverse resection of the stomach for ulcer in sixty-four of von Eiselsberg's cases there was a recurrence of the ulcer in nine and in four of these a second operation was necessary. Von Eiselsberg confirms von Haberer's statement that Billroth's first method gives successful results and has low mortality.

To reduce the acid-forming area of the stomach various methods have been employed such as extensive resection of this portion, pyloroplasty, feeding or in folding of the stomach and section of the gastric wall down to the mucosa around the ulcer bearing in mind to decrease the activity of the glands.

Rosenfeld and Strauss emphasize the gravity of tension pylorogastrectomy as compared with simple gastro-enterostomy.

The author does not favor the H. Beck-Mickulicz method or the Finney pyloroplasty for gastric ulcer.

The Germans attach especial importance to the changes in the nervous and blood supply caused by resection of the outlet of the stomach.

The author states that gastro-enterostomy favors healing by improving the gastric condition but has no direct curative effect. Therefore after the operation the patient must be kept under observation.

His conclusions are summarized as follows:

Intelligent patients should be told that around all operations are sometimes necessary to give the best chance for recovery by the least radical methods.

Gastro-enterostomy is applicable to cases of ulcer near the pylorus in the symptoms of obstruction if the patient is well cared for afterward.

Partial pylorogastrectomy by the first Billroth method has a place in the treatment of callosus ulcers, ulcers remote from the pylorus, multiple ulcers and cases complicated by perforation and the penetration of adjacent organs.

Gastro-enterostomy is suitable also for other types of ulcers. In such cases however failure to secure full relief may necessitate subsequent radical operations such as Billroth's second resection.

Conservative methods may be better for both the patient and the surgeon.

WALSLEY, C. B. BAILEY, M.D.

Walsley, G. Choice of Operation for Gastric Ulcer. *Lancet* 9, 1914, 4.

This article is based on a series of fifty-seven cases in which cases of gastric ulcer operated upon by the author. Cases of cut or chronic perforation are not included. The operations performed were of five types, 14 gastro-enterostomy, 10 transverse resection by the Billroth II method and resection by the POY method.

Simple gastro-jejunostomy does in sixteen cases, with good results in 80 per cent.

In some cases the pylorus was excluded but the results were no better than when this was not done. Therefore it is discontinued.

In eight cases in which the ulcer was resected good results were obtained in 80 per cent. In most in-

tances a gastro-enterostomy also was performed. When the ulcer is not too far from the pylorus the thoric vora resection.

In nine cases resection was done. As these were the worst types of gastric ulcer the results were not so satisfactory. Thirty three per cent of the patients are well and thirty three per cent are better.

Eight cases were treated by the Billroth II operation. There were four deaths.

The Pólya caecio was performed in thirteen cases, with good results in 96 per cent.

For ulcers 3 to 4 in from the pylorus the choice lies between resection and excision.

For ulcers near the pylorus or 3 in from the pylorus the thoric vora the Pólya method.

If the operation is done in two stages a gastro-enterostomy has been done previously the Billroth II method is the rational procedure.

For ulcers at or close to the pylorus, especially those which cause stenosis, a posterior gastro-enterostomy is the simplest and safest operation.

Because of the possibility of cancerous degeneration of a gastric ulcer resection or excision of the lesion is ideal unless the operative risk is greatly increased by the general or local condition.

I. E. BRANKOW, M.D.

Stenglen, M. The Treatment of Callous Gastric Ulcer by Transventricular Excision by the Kraske Method (Behandlung des callösen Magengeschwürs durch transventriculäre Exzision nach Kraske). *Beitr. Klin. Chir.* 9, cxvii, 400.

As the biology of gastric ulcer has not yet been determined and as there are so many contradictory views regarding it, the surgical treatment must depend upon the indications in the individual case. The operation should always be as conservative as possible and as radical as necessary, and particular care must be taken to avoid injuring the important vessels and nerves of the lesser curvature.

The author reports a series of cases in which an ulcer on the posterior wall and the lesser curvature of the stomach was exposed through an opening in the anterior wall of the stomach according to the Kraske method and removed without opening of the posterior wall. Following the excision of the ulcer the wound was cauterized and the musculature and mucous membrane are joined with deep sutures. Gastric enterostomy was performed only when it appeared that the ulcer had a mechanical effect on the pylorus by reason of its situation. In recent cases entrance has been gained to the stomach through the posterior wall after division of the gastrocolic ligament.

The application of clamps to the stomach does not appear to be essential for aseptics. By proper lavage of the stomach before operation, by the aspiration of escaping gastric juice with an air pump during the operation, and by careful packing of the vicinity the escape of gastric contents into the abdominal cavity can be prevented. In Stenglen's opinion the application of intestinal clamps may be a causative factor

in the development of peptic jejunal ulcer. In his own cases in which clamps have not been used there has been no instance of peptic jejunal ulcer in the last ten years.

In the fourteen cases of this type which were operated upon (only those with perforated ulcers of the posterior wall and lesser curvature) there were twelve deaths following operation: one on the nineteenth day from embolism, and the other on the fourth day from pleurisy consequent on the anastomosis. The latter was that of a patient who was 67 years old. Among the other twelve cases there were six complete cures, five recurrences, and no case in which an ulcer could not be discovered although the patient constantly complained of symptoms. In the cured cases gastric enterostomy was performed twice, gastrostomy in one, gastroplasty in two, and excision of the ulcer only without any other operation in one. In all of the cases of recurrence excision of the ulcer alone was done. In none of these cases gastro-enterostomy performed later gave permanent relief from pain.

It appears therefore that the results of transventricular excision of the ulcer according to the Kraske or Miesch method are better when this operation is combined with gastro-enterostomy. On the basis of his own experience the author can recommend transventricular excision as an emergency operation but not as the method of choice for ulcers of the posterior wall. He believes that the most important cause of recurrence is the entirely inadequate loosening and mobilization of the posterior wall and, above all, the continuance of the circulatory disturbance which is increased by the suture.

Boo (2)

Peterson, E. W. Acute Intestinal Obstruction in Infancy and Childhood. Brief Review of Fifty Five Cases. *Surg. Gynec. & Obst.* 9, cxiv, 436.

Peterson reviews fifty-five cases of intestinal obstruction in fifty-three young subjects. Cases of imperforate anus, congenital atresia or stenosis, and strangulated external hernia have not been included.

Acute intestinal obstruction is the most serious surgical affection of the abdomen in early life. Most other surgical conditions tend toward spontaneous recovery. It is generally accepted that the lumen of the obstructed bowel contains a toxin which, when injected intravenously into a normal animal, causes the symptoms of intestinal obstruction, and that certain chemicals are developed as the result of protein disintegration which cause the symptoms present in acute intestinal obstruction, namely the fall in blood pressure, temperature disturbances, vomiting, diarrhea, derangement of kidney function, high non-protein blood nitrogen, profound congestion of the duodenal and jejunal mucosa, and collapse which some times result in death.

In the fifty-five cases the obstruction developed in infants in forty-three, and in children (from

the only months to 11 years) in the child. There were twice as many males as females. Intussusception was the responsible factor in forty-six cases. In the others the condition, as due to early post-operative band or adhesion obstruction, late post-operative band or adhesion obstruction, band or adhesion obstruction without previous operation, tumor obstruction, mesenteric thrombosis, previous obstruction, or foreign body obstruction.

Intussusception 1 per cent. Infection of infancy and early life. Thirty-nine of the patients whose cases are reviewed were infants from 3 days to thirteen months old and seven children from twenty months to 3 years of age. Thirty were males and fourteen were females. The cardinal symptoms are pain, shock, vomiting, mucous or bloody stools, and abdominal tumor. The pathologic process consists in intussusception, circulatory stasis with exudation and edema, infection, inflammation, and gangrene of the intussusceptum. Necrotic, uncomplicated abdominal purpura and cystic colitis must be ruled out.

Pain was present in all cases and some degree of shock in most of them. Vomiting occurred in every case. When vomiting occurs early it is indicative of reflex stranguination. Microhemorrhagic stools and a palpable tumor are both present in 95 per cent of the cases. Early operation is the safest, simplest and only certain plan of treatment, and gives almost uniformly good results in all types of cases regardless of the age of the patient. According to the classification of Lubbe the arteries were entered three times, of which one enterocolic or double intussusception, eight, and colic in

four. In the majority of cases no definite etiology factor was found. In two cases the responsible factor was a Meckel's diverticulum in another a congenital tumor of the cecum and in several instances appendicitis. The author has made it safe always to remove the appendix, believing that occasionally appendicular irritation induces the spasm and brings about the intussusception.

There was recurrence in 1 case. In one, the intussusception returned at the same site. In the other adhesion accelerated a second operation and still yet another intussusception required resection.

There was but one successful reduction (about 14 per cent). When reduction was accomplished, the mortality was 5 per cent. Excluding the deaths not due directly to the intestinal obstruction or its surgical treatment the mortality drops to 0.7 per cent. The longest interval between the onset of the condition and successful reduction was four days, and the shortest, five hours. All patients were within forty-eight hours of the onset recovered. In the cases requiring resection the mortality was 75.4 per cent. Recovery in cases developing an infarct after resection is rare.

The most important factor in the treatment of intestinal obstruction is early operation. Frazier says it is more important to perform the operation

early than wait. A two-stage operation is often proved successful. In a single procedure may result in failure. A local anesthetic is the anesthetic of choice in many cases. O. S. Proctor, M.D.

O'Connor J. Acute Intestinal Obstruction. Rev. M. J. 9, 374.

The general symptoms in intestinal obstruction are frequently delusory as regards the amount of systemic poisoning and shock which has taken place. Early operation without ventilation, under manipulation or prolonged anesthesia offers the best chance of recovery.

The location of the incision is extremely important. The author has found that when the area of incision is not indicated by the history the obstruction will usually be found in the ileocecal region. In such cases the incision is made along the lower portion of the right semilunar line. As a rule such an incision obviates too much handling of the bowel.

When complete occlusion of bowel is gangrenous lateral incision is done, the gangrenous bowel is incised, and the intestinal contents are emptied into the peritoneum. A trial ligature is then tied around each portion of bowel, the gangrenous portion is cut away, the stumps are inverted, and the gut is secured by string sutures are tied.

When narrow band of gangrene is resulted from obstruction, stay sutures are inserted over the gangrenous band, the bowel is cut through and excised, and continuous Lembert suture is placed about the incised bowel.

In doubtful cases in which the band of gangrene is wide, crucial incision is made in the gangrenous area, the intestinal content are evacuated, the four gangrenous flaps are excised, and the interior of the bowel is inspected. If there is no angulation the bowel is reunited by continuous Lembert suture.

In acute colic obstruction the outlook is very grave because of the enormous distention.

Through a right vertical incision the hand is swept down to the right iliac fossa and at the lower portion of the rectum of the cecum, small incision is made in the iliocecal junction. The cecum is then palpated through this opening and through and through sutures previously introduced at the external incision are tied. The cecum is secured to the incision, washed, and evacuated. The later operation is then performed according to indications.

In conclusion the author states that if greater care is taken in the peritonization of the stumps and raw surfaces at operation the number of cases of intestinal obstruction could be greatly decreased. J. L. Dismore, M.D.

Smith, R. Intestinal Foci of Infection. Ann. Surg. 9, 1221-5.

The author believes that chronic arthritis originates from focal infection in the intestinal tract due to the failure of some part of the ileocecal coil to empty itself properly.

X-ray examination of over 100 cases of chronic arthritis has shown a uniform picture of congenital mobile cecum. By reduplication of peritoneum from the right colic artery to the parietal peritoneum over the right kidney the cecum is rotated and folded so that an hour glass appearance is produced with thin-walled toneless cecum which does not empty itself. This inert sac ultimately becomes a culture medium for various bacteria, chiefly streptococci.

Stool examination in thirty cases has shown amoebae and flagellate protozoa. Perhaps these organisms play a secondary rôle in the infection by furnishing culture media for bacterial growth, and by their passage through the mucous membrane make portal of entrance. Ely found amoebae histolytica in the head of the femur removed in a case of arthritis deformans.

In 95 the author reported fourteen cases of chronic arthritis operated upon for the removal of intestinal foci of infection. Two of the patients have died, four are untraced, three are no better, one has an arrest of the disease but is unable to walk on account of joint fixation, and four restored to normal activity.

Of the patients whose cases are reported in this article thirty were operated upon before 1917. Ten were bedridden and helpless when operated upon, are now able to work with their hands and are self supporting. In these cases a partial colectomy or ileocecectomy was done.

In thirty eight cases operated upon since June 1920 there were eight Mayo colectomies on the right side, ten ileocecectomies, and twenty eight plastic operations on the ileocecal coil designed to restore cecal function and do away with the sac. There was temporary alleviation of the symptoms of pain, swelling, and joint immobility. Following the use of restricted diet, liquid paraffin, and abdominal support, there was progressive improvement. The joints became amenable to orthopedic treatment as soon as the pain subsided. Operations and manipulations may be carried out without fear of lighting up another attack of acute inflammation.

The most striking immediate results follow removal of the right colon together with daily hypodermoclysis of 1,000 cc. of saline solution until the quantity of urine increases from 100 to 1,000 ccs., which occurs about the tenth day. In forty eight to seventy-two hours the swelling and pain disappear and the joints become movable. When the quantity of urine reaches normal the joint symptoms recur.

After the release of constricting bands or the division of a Lane kink, recurrence may be prevented by the interposition of tissue or the use of free omental grafts to cover all the denuded surfaces.

The author concludes that chronic polyarthritis may be the result of focal infection in the ileocecal coil and that a case of arthritis calls for careful investigation of the gastro-intestinal tract, especially the mobility and motility of the ileocecal coil. If a pocket is found the treatment should consist

in an abdominal operation to correct the faulty mechanical conditions and to restore the function of the cecum, prolonged medical régime to restore the normal intestinal flora, and orthopedic procedures to restore joint function.

WALTER C. BURKETT, M.D.

Hildenbagen, M. A. Two Cases of Rare Diseases of the Rectum (Zwei Fälle seltener Erkrankungen des Mastdarms). *Wien. klin. Wochenschr.* 1922, 1, 65.

Case was that of woman 46 years old who had palpable, hard, and very painful infiltration with an ulcerous base in the ampulla of the rectum. The Wassermann reaction was negative. Carcinoma of the rectum was suspected and an artificial anus was formed. The operation was followed by regression of the infiltration and its complete disappearance in a few weeks after a course of anti-syphilis treatment. This was therefore a case of gumma of the ampulla of the rectum.

Case was that of an unmarried woman 50 years old who had been castrated and subjected to prophylactic radium treatment per rectum because of carcinomatous cystoma of the ovary. A hard, deeply penetrating ulcer of the rectum developed which clinically resembled carcinoma but on biopsy was recognized as an inflammatory radium ulcer.

Pinnerow (Z.)

LIVER, GALL-BLADDER, PANCREAS AND SPLEEN

Dreemmen, J. G. Bacteriology of the Gall Bladder. *Ann. Surg.* 1911, 53, 45.

This study is based on 100 unselected gall bladders removed at the Mayo Clinic. Cultures were made of the fluid contents, which consisted largely of mucus, serum, blood and degenerated epithelial and pus cells and in 50 v resembled pure bile. Infected fluids were found in only 9 per cent of the cases. The organism was the bacillus coli in 1 per cent, the staphylococcus aureus in 4 per cent, the streptococcus haemolyticus in 1 per cent and non-pigment forming sarcina in 1 per cent. The possibility of obtaining cultures from gall bladder fluids is dependent upon the amount of inflammatory exudation acting as diluent.

From the experiments reported it seems permissible to assume that the growth of bacteria will not take place in pure bile. To demonstrate this, a series of tests was made with various dilutions of bile inoculated with different types of bacteria. Eighteen organisms were inoculated into 70, 80, 90 and 100 per cent glucose bouillon, and controls in 100 per cent glucose bouillon were made. These organisms, with the exception of the non-pigment forming sarcina, grew well in the control, and in 10 per cent and 70 per cent ox gall. In 80 per cent ox gall only 33 per cent of the organisms showed growth, and in 90 per cent ox gall, only 55 per cent. In the pure ox gall there was no growth.

elliptical opening about the size of the tip of the little finger communicated with the body of the pancreas at a point just to the left of the median plane. The edges of the cyst where the trocar had entered were manipulated to the anterior abdominal wall and a large tube drain was inserted deeply into the cyst cavity. The cyst fluid contained pancreatic ferments. The omental sac showed fat necrosis.

Convalescence was uninterrupted. Drainage was never profuse and rapidly grew less. The cyst cavity was irrigated daily with 1000 silver nitrate solution. Seventeen days after the operation the patient left the hospital with the wound healed.

Of forty-six patients whose cases were collected by Stuart, thirty-nine were operated upon and six died, and only seven recovered. After an exploratory laparotomy Ochsner successfully drained abscess of the pancreas and Delatour successfully drained pancreatic cyst from behind.

The author is undecided as to whether posterior drainage should be employed without previous anterior exploratory laparotomy. Posterior drainage is best in the treatment of pancreatic abscess.

Anterior manipulation has given such satisfactory results in the majority of cases that it is the operation of choice. Complete excision of the cyst is generally to be found impractical or impossible.

WALTER C. BURKET M.D.

Seauther C. T. Case Report: A Large Pancreatic Cyst. *Cancer* 1917, 9, 1135

The author's case was that of a girl aged 6 years. Four years ago the abdomen began to enlarge gradually. Three years ago 6 qts of fluid were removed from the abdomen by tapping. Two years ago 8 qts were withdrawn. Gradual refilling occurred. Otherwise the patient seemed well. The temperature, respiration, and pulse were normal. The abdomen was enlarged from the symphysis pubis to the diaphragm. Percussion dullness extended from the pelvis to the stomach and midline. The abdomen was tympanitic over both flanks and the stomach.

Operation performed through midline incision below the umbilicus showed the abdomen to be filled by a large cyst whose base was attached to the upper part. The cyst wall was slightly yellow. Ten quarts of gray milky fluid were drawn off by means of a trocar and suction apparatus and the sac was then drawn out and opened more widely. The lining of the cyst was rubbed with an iodine sponge and part of the cyst wall was excised. The sac, with rubber tube tied into it, was then drawn out through a small incision below the umbilicus and fastened and the abdomen closed.

There was almost no drainage. The patient left the hospital on the sixteenth day and continued well until the twentieth day when she developed an influenza pneumonia from which she is now recovering.

The cyst presented below the transverse colon. Pancreatic cysts may present above the stomach between the stomach and colon, or below the colon.

WALTER C. BURKET M.D.

MISCELLANEOUS

Clute H. M. Subphrenic Abscess. *Boston M & S J* 9, 1891, 68.

Subphrenic abscess is usually secondary to perforation of gastric or duodenal ulcer or to appendicitis. Less common causes are disease of the gall bladder, biliary tract, pancreas, spleen, or hemorrhagic empyema wounds of the abdomen, chest soiling of the abdominal cavity at operation, and septicæmia with localization of the infection between the diaphragm and the liver.

In addition to the posterior uncovered area, there are four fairly distinct peritoneum-lined spaces between the liver and the diaphragm which are formed by peritoneal reflexions. The coronary and left lateral ligaments divide the diaphragm into surface of the liver roughly into an anterior and posterior half and the falciform ligament divides its anterior and superior peritoneal surfaces into right and left half. The left intraperitoneal space is the lesser peritoneal cavity.

A perforated gastric ulcer tends to drain into the right anterior space. A posterior gastric ulcer may perforate into the left posterior space. A high appendiceal abscess may drain into the right posterior space by way of the lateral colic groove. Infection readily follows the lymphatics behind the cecum and the ascending colon into the subphrenic area. A pyelophlebitis may present as one of its features. Abscess about the portal vein just below the diaphragm. This abscess may contain pus alone or pus and gas. The gas comes from tricus or is produced by an erobac bacterium.

The symptoms may begin insidiously or acutely. When the onset is gradual the patient may be complaining seemingly of little from a surgical lesion in the abdomen when a steadily rising daily fever with chills, sweats, and loss of appetite and weight develops. There is a sense of fullness in the epigastric region associated with considerable gastric distress, belching of gas, and sour eructations, hiccuping, cough, and pain on deep breathing (diaphragmatic pleurisy). The patient looks ill and feels very sick and soon grows worse rapidly.

An acute onset may occur with shock and collapse from gastric or duodenal perforation. A diffuse peritonitis or localized subphrenic abscess may result.

Physical examination shows marked limitation of motion on the affected side of the chest, visible widening or bulging of the right lower thorax, and occasionally edema over the right side or the back of the chest. Percussion reveals flatness over the lower anterior and posterior thorax. The presence of gas gives tympany with obliteration of the lower liver dullness. The line of percussion dullness may

descend th respiration Dullness may extend anteriorly to the second rib and posteriorly to the middle of the scapula Auscultation discloses absence of the breath sounds and vocal fremitus over the area of dullness Above this level for a short space vocal and tactile fremitus may be increased because of compression of the lung Occasionally there is a pleuritic friction rub When the abscess contains gas and pus percussion splash may be elicited by shaking the patient Fluid in the pleural cavity complicates the diagnosis When this is present th exploratory needle may obtain first a straw-colored fluid and then pus or pus and gas The lower edge may be well below the costal margin Marked leucocytosis is generally present In certain chronic cases there is a leucopenia

X-ray and fluoroscopic examinations give the most positive findings in the majority of cases It may be difficult to determine by the symptoms and physical signs alone whether the condition is a subphrenic abscess, pyothorax or pyopneumothorax A high fixed diaphragm with persistent costophrenic angle is very typical of subphrenic abscess The level of the diaphragm may be only slightly raised or in touch to the third rib The line of the diaphragm is smooth regular curve In cases of liver tumors, abscesses, and adhesions from old pleurisy this curve is more irregular and more sharply localized

Subphrenic abscess causes weight loss, sickness, and general debility In cases not operated upon the mortality ranges from 8 to 100 per cent, while in those treated surgically it is 5 per cent

The treatment is incision and drainage Abscesses on the left side must always be approached from

the front A left anterior space abscess is drained through the anterior abdominal wall A left posterior abscess is drained by a second incision from behind, which may or may not be below the rib margins Collections on the right side are drained from below the rib margins, or by incision between the lower ribs, or by resection of one or more ribs To drain adequately one must go through the lower part of the pleural cavity or retract the pleura A superimposed empyema may be fatal

The author recommends a 2-stage operation under local or general anesthesia At the first operation a portion of the tenth rib is resected as the mid-axillary line If the pleural cavity contains fluid this will then escape The borders of the opened parietal pleura are sutured th continuous catgut sutures to the diaphragm which presents in the wound The wound is dressed th vaseline gauze After forty-eight hours, when the pleural cavity has become walled off by adhesions, an incision into the diaphragm parallel to the parietal incision in the pleura is made under local anesthesia The edges are retracted and the pus is located with the finger A large rubber-tube drain is then inserted and held in place by a suture through the skin or fascia Tube-drainage is continued for week or more and followed by drainage by rubber dam Too hasty removal of the drain may result in the formation of a secondary local abscess

The author has no difficulty from bleeding intercostal vessels or rib necrosis, and reports 14 curable results from the procedure described The two-stage operation is safer than the one stage operation because it reduces the chance of empyema to the minimum
WALTER C. B. REEVE, M.D.

SURGERY OF THE EXTREMITIES

CONDITIONS OF THE BONES, JOINTS, MUSCLES, TENDONS, ETC.

Winkelbauer, A. Chronic Non-Suppurative Osteomyelitis in the Adult with Primary Total Necrosis of the Diaphysis (Ueber chronische nicht eitrige Osteomyelitis beim Erwachsenen mit primärer Totalknorpel der Diaphyse) *Arch f Klin Chir* 9, 1919, 20

Two cases are reported which speak in favor of Ritter's theory that in osteomyelitis the necrosis is primary throughout its entire extent and that later breaking down of the bone does not result from the suppuration

In the first case a curettage without an increase of fever was followed by swelling of the entire arm which persisted for two months and then retrogressed slowly following immobilization and the application of heat The roentgenograms showed osteomyelitic necrosis of the diaphysis of the humerus In the second case, in which the course of the condition was similar, a cloudy, serous, slightly blood-colored fluid containing staphylococci was obtained on puncture

In three months the albuminous exudate changed into pus

In neither case did the osteomyelitis show an acute stage The necrosis of the entire diaphysis, such as roentgenologically demonstrable fl and eight weeks, respectively, after the beginning of the disease speaks in favor of an insidious disturbance of nutrition of the affected bone occurring in the nutrient artery The severe reaction of the tissue in both cases soon led to hyperostosis of the periosteum and the development of a perosteal mantle of bone In the second case a small sequestrum was removed by operation to hasten healing The author states that as rule conservative treatment is advisable in these chronic albuminous forms
Bart, 1919, (2)

Bartle, G. Hemorrhagic Osteomyelitis *J Bone & Joint Surg* 9, 1919, 651

The author emphasizes the fact that hemorrhagic osteomyelitis is essentially a benign condition with the characteristics of mild inflammatory affection Until comparatively recently it was regarded as malignant

There is a similarity between the scavenger giant cells of simple hemorrhagic osteomielitis and the giant cells of giant-cell sarcoma. In the former condition there is also an associated low grade inflammation.

About 75 per cent of the cases are due to bone trauma. Other causes are hematogenous infection, bone metastasis, and endocrine disturbances. The lower extremities are most frequently involved.

Usually the symptoms are mild. There is pain on pressure associated with limping if the lower extremity is involved, and with limitation of motion if the condition is near a joint. The size of the swelling varies according to the area involved.

Grossly a mass of highly vascular granulation tissue fills the cavity of the bone. Microscopic examination reveals the typical granulation tissue. Some sections show numerous scavenger giant cells but their distribution is irregular.

X-ray examination is essential. Usually it shows a clean-cut round spot in the cortex. Expansion without breaking of the periosteum is observed. In young persons the condition does not penetrate the epiphyseal cartilage.

In the differential diagnosis acute inflammatory infections of bone, highly malignant processes, chronic bone abscess, true bone cyst, myxoma, and slowly growing fibrosarcoma must be considered.

The treatment consists in removing all exuberant granulations filling the destroyed bone area, and through curettage of the cavity wall. Repair in large cavities is favored by filling the cavity with bone graft, chips, or a Moscovitch plug.

R. A. G. MURPHY, M.D.

Maschi, B. Primary Multiple Sarcomata of the Bones (*Sarcomi multipli primitivi delle ossa*). *Faladus Roma* 9 2212 sez. chir. 473.

The author's case of multiple and primary bone tumor as that of a man aged 30 years who had suffered from youth from chronic bronchial catarrh and pulmonary emphysema. When examined by Maschi he showed a frontal tumor the size of a hen's egg which had increased slowly and continuously (about pain during period of five months). The growth of the neoplasm, as associated with sharp thoracic pains and cough. Numerous other tumors were found in the cranial bones, the clavicle, the mandible, and the ribs. The seventh rib on the right side tumor caused fracture. As far as could be discovered these growths were contemporaneous in their evolution with the frontal tumor. A diagnosis of multiple myelomata was made. Tuberculosis, syphilis, and chronic inflammatory processes were ruled out by the findings and history. The symptoms were essentially and continuously osseous and left no doubt regarding the primary localization of the disease in the bones.

The frontal tumor was removed. The breach in the bone involved both the external and the internal table. The tumor was different from dura. Histologically it seemed to be a round cell sarcoma.

The author discusses multiple myelomata and sarcoma of the bones and their relationship at length. As his patient had had several previous falls during periods of intoxication trauma may have been an etiological factor in the condition.

W. A. BRENNAN

Rhodes, H. L. Periosteal Sarcoma in Association with Osteomyelitis; Report of Three Cases. *Surg. Gynec. & Obst.* 9 XXIV 440.

In two of the cases reported there was an ulceration of the skin through which the pyogenic infection of the bone might have entered, and in the other case the malignancy may have developed after the operation for the osteomyelitis. The fact that two of the patients are living and in excellent health over a year after the amputation supports the generally accepted view that the round cell tumor is not apt to form metastases.

F. J. BERNHEIMER, M.D.

Finstetter, H. A Muscle Angioma of the Deep Musculature of the Neck, the Rhomboides Minor Muscle (*Muskelangiom der tiefen Nackenmuskulatur Musculus rhomboides minor*). *Ill. W. klinische* 9 2, XXIV 569.

The author reports a case of tumor as large as the fist which developed on the right side of the neck of a girl 9 years old. This growth was an intramuscular cavernous angioma with relatively hard fibrous septa which had its origin in the proximal portion of the rhomboides minor muscle. It extended from the second cervical vertebra to the first thoracic vertebra and was connected by large venous bands with the vessels of the neck and the deep vessels of the muscles along the vertebral column. It was distinctly compressible. Operation resulted in cure. The differential diagnosis from lipoma, cold abscess, and meningocoele is discussed briefly. The diagnosis was established by puncture (dark blood). An early operation is advisable as the tumor may grow and exert increasing pressure on the neighboring organs.

HORRIGAN (Z)

Rogers, M. H. The Pathology of Tuberculosis of the Joints. *A Study from the Clinical Standpoint.* *J. Bone & Joint Surg.* 923 2 IV 679.

It is taught today that in a large percentage of cases of joint tuberculosis the original focus is in the bone, near or at the epiphyseal line, and that the involvement of the joint is practically always secondary.

As described in the literature the pathology consists of an invasion of the bone, generally at or near the epiphyseal line, extension toward the joint surface, destruction or absorption of the joint cartilage, and invasion of the capsule.

In an article on this subject published in 1907 Allison agreed with Nichols who stated in 1898 that the bone invasion was the typical pathologic lesion first initiated.

From cases treated at the Massachusetts General Hospital the author concludes that contrary to

Hersen P. Acromegaly from the Surgical Standpoint (Ueber Akromegalia vom chirurgischen Standpunkte) *Nervy Chir Arch* 9 83

This article is based on the following case. The patient was peasant 45 years old who gave history of alcoholism. He had married 18 years of age. His wife had aborted once and had borne five children. All of the children died early. The patient acquired syphilis during his twenty second year but was cured. For fifteen years he suffered the severe headaches. For ten years he noticed increase in the size of his face, hands, and feet but there had been no further increase in the last few years. Five years before he was seen by Hersen he had been operated upon, a large frontotemporal flap being cut on the right side. According to the surgeon report the sella could not be reached.

The patient was of massive build and tall. The lips and tongue and the skeleton and soft parts of the face, the hands, and the feet were markedly hypertrophic. The skin was very where hairless, dry and inelastic, and the papillae were enlarged, broadened, and sclerosed. The subcutaneous fat tissue was soft and hyperplastic especially in the mammary regions. The patient complained of continuous headache and apathy. Other conditions or lack of insight without limitation of the visual field, slight myopia, and tardy reaction of the pupils. Sensory and motor disturbances were absent but there was no knee reflex or Achilles tendo reflex. The thyroid gland was not palpable. The penis and scrotum were flaccid and the testicles atrophic. The patient had been impotent for ten years.

The roentgenogram showed an enormous enlargement of the mandibles, the supra-orbital arches, and the frontal sinuses and marked widening and deepening of the sella turcica. The posterior clinoid processes were indistinct.

The author considers it possible that the adenoma myxodema-like symptoms in this case insofar as they were not due to secondary stage of pituitary hypofunction, were the result of the atrophy of the thyroid gland and testicle.

Hersen was opposed to the transcranial operations as they are not based upon embryological development and they open the thin and occasionally broken wall of the sphenoidal sinus in the presence of frequently undetectable lesions of the floor or the anterior wall of the sella turcica, in this way destroying asepsis. The various endonasal methods are equally unreliable.

In the case reported the author operated according to the Giordano-Schoffier method. He reflected the nose laterally with an osteoplastic flap 4 cm broad taken from above split the septum from the floor of the frontal sinuses downward and backward and resected the septum, the upper and middle turbinate bones, and the ethmoidal cells. He was unable, however, to distinguish the anterior wall of the sphenoidal sinus distinctly and did not reach the sphenoidal sinus. He cut through fairly thick layer of bone near the anterior all of the sella

turcica partially opened the sella split the smooth dura protruding in front of it (whereupon no spinal fluid escaped) and removed with spoon about 5 gm of colloidal substance. The upper border of the hypophysis, which showed neoplastic change was not reached and no attempt was made to reach it. Iodoform gauze strips were laid in the sella as advised by Kocher the nasal cavity was packed and the nose and the flap of lip and bone removed from the anterior all of the frontal sinuses were returned back into place. Primary union resulted.

Rhinoscopic examination, which was done later showed only a few pale granulations at the upper roof of the nasopharynx at the base of the skull. A probe entered the cavity of the sella turcica freely without causing any bleeding or escape of cerebrospinal fluid. The head had disappeared. Even at the end of the first week diminution in size was observed in the face, the fingers and the tongue. The color of the skin became normal, the thyroid gland became palpable and the apathy decreased markedly. Vision and the pupillary reaction however remained unchanged.

Microscopic examination showed that fairly large glanglular flap had been removed in addition to considerable amount of secretion. The mass was composed of conglomerates of round basophilic cells with round nuclei and almost no territorial substance which was interrupted only by broad thin walled blood vessels and large granulated round eosinophilic cells. In addition the specimen showed hollow spaces filled with colloid which was lined by a single layer of cuboidal epithelium.

V. OSTA SUKAL (C)

FRACTURES AND DISLOCATIONS

Mitchell, A. P. Ununited Fractures Due to War Injuries. With Final Results of Operative Treatment in 100 Cases. *Brit J Surg* 9 2, 59

In sixty-one of the cases reviewed the author performed the primary operation. In only four cases had been operated upon previously by other surgeons.

The gap between the fractured ends measured 1 cm and was filled with fibrous tissue. The surrounding soft tissues showed fibrosis and bled easily. The fragmented ends were often tapered brittle and sclerosed.

Local causes for non-union were primary loss of balance, fifty-five cases; displacement, twelve cases; sclerosis and latent sepsis, five cases; sclerosis with plating and wiring, five cases; sclerosis and gap, twelve cases; and sclerosis alone, twelve cases.

Pre-operative treatment was employed in attempt to overcome deformities resulting from sepsis, nerve injury, or limitation of motion in the joints.

As it was impossible to determine when gunshot wounds were free from latent sepsis no operation was attempted until the wound had been healed for

twelve month. Most of the wound were healed (see fifteen month before operation was performed). Latent infection was encountered in six cases. At stage operation was done when prolonged sepsis of the original wound had resulted in tenon scarring of the tissues (the use of the non union).

At the preliminary operation by the thoracic sclerosed tissue was completely excised. The wound was then closed. The graft was done fourteen days later.

Infection and successful graft were not incompatible but the chief cause of failure was sepsis.

Success is impossible unless the following principles are adhered to: (1) skin incision of sufficient length; (2) the complete excision of scar tissue; (3) an extensive surface of contact between the graft and the host bone; (4) the presence of healthy muscle bed; (5) the use of metallic or non-absorbable sutures; (6) perfect hemostasis and strict asepsis; (7) plaster of Paris immobilization until firm osseous union has occurred.

Most satisfactory was the use of the autogenous tibial graft including peroneum, compact bone and medullary tissue. A few cases grafts of costal periosteum were used. These also proved satisfactory. Periosteum facilitates secondary union. One of the graft and protect the graft if it is not again lighted on.

The graft must be long enough to be withdrawn completely from the gap. The graft employed was usually from one to three times the length of the gap.

I describe the method employed by the thoracic uses the ulnar operation as an example. A skin incision of sufficient length was made along the posterior-lateral border between the forearm and the extensor carpi ulnaris. All scar tissue was excised and the fractured ends were exposed. All sclerosed and ragged bone between the fragment was removed. The muscles, with the peroneum, were stripped from the bone fully an inch from the fractured ends and for practically one-fourth of the circumference of the bone. A thin layer of bone was removed with an osteotome. The full length of the exposed bone, deep enough in places to expose the medullary canal.

Interrupted sutures of strong tanned silk were passed through the reflected peroneum and muscle on either side of the prepared bed and a flexible probe was laid in the defect and bent to the exact length of the graft required. A graft equal to the length of the bent probe was removed from the outer side of the anterior border of the tibia by means of a circular saw and transplanted immediately underneath to the catgut loops. The ligatures were then tied and the skin wound was closed with interrupted silk-worm gut sutures.

Plaster of Paris was used for immobilization for period of six weeks. At the end of this time the stitches were removed and a second cast applied after an X-ray examination. At the end of three months the plaster was removed with

Non-union of the radius is more important than non-union of the ulna. It occurs most frequently in the lower half of the bone. The exposure of the radius for operation is done by an oblique line which separates the radial tendons of the wrist from the extensor carpi ulnaris and extensor. To secure proper alignment it is necessary to lever the lower fragment away from the ulna and rotate it to the separated position.

The graft is placed preferably to the posterior surface of the fracture above the level of the pronator. It tests the proximal fragment is completely separated and the distal fragment is proximal. A medullary intramedullary peg proved most satisfactory. One end of the graft is inserted into the medulla of the proximal fragment and the other into the distal gutter made in the short distal fragment.

Union is of frequent occurrence. I sometimes doubt it is so right that bone-grafting is necessary. Non-union in the lower part of the shaft is of little effect on the use of the hand.

Non-union of the humerus occurred in ten of the thirty cases. Non-union is more frequent in the humerus than in any other. The reason of difficulty of union is the enormous bone graft cannot be so generally employed in the humerus as in the radius, ulna, and tibia and bone-grafting is of little value regardless of arm function. The most successful method is the top cut operation.

In fractures of the tibia with intact fibula there is usually little displacement. In fractures of the tibia with fracture of the fibula, the opposite point the displacement is more marked and is frequently angular. The lower fragment usually shows a certain degree of rotation on the knee and of the bone resulting in internal or external displacement of the foot.

Non-union of the femur is rare. The art of non-union in the author's three cases was about the middle third of the shaft.

Seven graft fractures occurred in the series of eighty-three cases. All but one were tibia-fibula grafts.

JOHN MERRILL, M.D.

Merrill, W. J. The Davis Method of Reduction of Congenital Dislocation of the Hip Joint. *J. Bone & Joint Surg.* 1905.

Davis' method of reducing congenital dislocation consists of four phases:

In the first phase the child is prone with the legs to be manipulated hanging down close to the sides of the table. An assistant fixes the pelvis by making pressure on it downward and toward the operator. A second assistant, under the direction of the operator, grasps the foot and knee, flexes the knee, flexes the thigh on the abdomen, rotating it inward, and makes pressure toward the femoral head in the line of the femoral axis while keeping the thigh close to the trunk. At the same time the operator exerts pressure upon the trochanter downward and toward the umbilical tuberosity. Internal rotation elates the Y-ligament and the external rotators.

During the second phase the operator grasps the knee and trochanter, extends the thigh down and toward the transverse plane of the pelvis, abducts the thigh and makes pressure on the trochanter toward the acetabulum, at the same time gently rotating the thigh in and out. If the head then does not cross the brim into the acetabulum, the leg is placed in the position of the first phase and the head is pushed downward to the obturator groove. Resistant cases often require long continued pressure to carry the head across the brim or through the obturator groove.

When the head is at the thyroid foramen, external rotation and extension are made to carry the head upward through the cotyloid notch. This last step completes the third phase.

In the fourth phase a cast is applied. This includes the entire extremity and the thigh of the opposite leg. When the dislocation is unilateral it is extended also to the lower thorax of the opposite side. The same form of dressing but without the lateral upward extension is used for bilateral luxations. The final position in the cast case is one of flexion, internal rotation, and abduction of the thigh.

The author states that in resistant cases it was used extreme flexion, abduction and internal rotation until the resistant structure yielded, and then forced the head into the acetabulum.

Flexion, abduction, and rotation were maintained until the X-ray and other clinical evidence indicated that the head, neck, and acetabulum would sustain weight bearing. The first cast was removed at the end of three or four weeks. Casts or splints or an abduction brace maintained the desired position until the roof of the acetabulum was capable of retaining the head.

Each case is handled according to the condition found. There is no fixed time for bringing the leg to the midline and establishing function.

JOHN R. MINCKELL, M.D.

SURGERY OF THE BONES, JOINTS, MUSCLES, TENDONS, ETC.

Brandt, G. The Treatment of Acute Osteomyelitis. (Zur Behandlung der akuten Osteomyelitis.) *Dtsche med. Wchschr.* 1912, xlviii, 97.

At the Halle clinic osteomyelitis has been treated in various ways by the different directors (Braman, Schmieden, Voelker) during recent years. For the purpose of subjecting to critical analysis the question whether the abscess should be opened with chisel or by simple incision, the author collected the material of the clinic for the last twenty years (1904 cases in which there were seventy-eight deaths, mortality of 56.5 per cent).

He concluded that in the majority of cases of acute osteomyelitis incision of the subperiosteal abscess is sufficient, chiseling of the medullary cavity being necessary in only a small number. The latter may be done also to secondary operation. The

dissemination and progression of the phlegmon of the soft parts and joint complications must be taken into consideration first of all. The bone should be chiseled open when the cortex is compact (old patients, rachitic children). The more extensive the subperiosteal process, the more readily may it be assumed that the outflow of pus through the Haversian canals is sufficient and that the process is localized chiefly at the periphery of the bone.

VON REDWITZ (Z)

Gergely. Osteotomy or Osteoclasis? Also a Discussion of the Springer Operation (Osteotomie oder Osteoklasie? Zugleich Beitrag zur Springerischen Operation.) *Arch f orthop. Ueill-Chir.* 9, 23, 40.

After having twice experienced infection of an osteotomy wound, the author prefers osteoclasis, a procedure which is all the more satisfactory when the proper treatment in the florid stage of the rachitis has been carried out. Under such conditions the new methods of Springer and Loeffler are unnecessary. As the early treatment of the rachitis is even more important than the early treatment of the deformities, the author admits to his hospital for crippled infants 6 to 8 months old. *SARVATZ (Z)*

Goljanitzki, I. The Surgical Treatment of Traumatic Pseudarthroses. Two New Methods of Operation. (Zur chirurgischen Behandlung traumatischer Pseudarthrosen. Zwei neue Operationsmethoden.) *Wenyskhir Arch.* 9, 14, 5.

A successful result is dependent not only on the structure of the transplant but also on the method of transplantation. In four cases the author obtained no result with an autoplasmic bone peg.

In the recent war it was noted that, in spite of associated injury of the soft parts, virulent infection, the expulsion of numerous sequestra, and insufficient immobilization, bony union of gunshot fractures occurred more frequently following extensive splinting than when the bone was not greatly shattered. As this indicates that the regenerating power of bone is greater the greater the separation of continuity Goljanitzki has introduced the principle of greater traumatization as a new factor in the treatment of pseudarthroses in cases with extensive cicatrices, considerable degeneration of the ends of the fragments, and doubtful sequesters.

As much of the diastrial tissue as possible is removed, the fragments are somewhat freshened, and then, with chisel or bone shears, an adequate longitudinal splitting of the bone ends up to the opening of the marrow cavity is done. When the diastasis is slight the impaction of the fractured ends of the bones in opposing slits is successful, but when the intervening space is larger it is filled with free bone fragments taken from the same site or elsewhere. Two pseudarthroses of the leg, two of the forearm, and one of the upper arm, and one flail joint of the elbow were treated by this method with good results.

previously divided anterior layer is sutured longitudinally over the hemorrhage. The muscle is not resected its ends draw part of themselves and the extravasated blood forms the new osseous tissue.

Following the operation a plaster-of-Paris dressing is applied in the corrected position and left on for three weeks. By the end of three weeks the extravasated blood is transformed into a soft substitution tissue. The after treatment consists merely in methodical lateral flexion of the head and drawing back of the shoulders. This should be continued for three months.

Subsequent examination of patient is operated on in the manner described has shown excellent permanent result. PARKHILL (2)

Hamilton, G. An Operation for Lengthening Bone. *Trans. State J. U.* 9, 2, 251, 203.

Hamilton has lengthened the femur in two cases. In one, the increase as in and in the other, little more. These patients have profited from his observation.

The technique consisted in dividing the femur and sliding one fragment on the other until the desired length was obtained.

It is generally believed that the same result may be obtained gradually as by Putti's method but in the author's opinion the shortening of the soft structures could make this impossible.

F. J. BRANNEN, M.D.

Kropfeld, S. M. Experiments in Bone Transplantation. (*Experimentelle Beiträge zur Frage der Knochen transplantation*). *Verh. Vlaender. Gewerk.* 9, 64.

Union of fracture of the neck of the femur has always been difficult condition for the surgeon. In 1905, Lane employed screw in case of this kind. Later Koch obtained good results with an ivory peg. In 1903, Lane transplanted the fibula in case in which the tibia had been destroyed by osteomyelitis. In 1905, Albee published large number of experiences on the transplantation of bone. In Holland, Noordhoff has brought the method into vogue.

It is still uncertain whether bone transplant always gives perfect cure in fracture of the neck of the femur. The author has studied in particular the questions whether it is necessary or advisable to leave the periosteum on the transplant, and whether living bone possesses advantages over dead bone. He experimented on dogs which he fractured the femur just beneath its head. Eleven such experiments with transplantation of the fibula showed without periosteum are reported in detail.

The microscopic examinations show that signs of necrosis appear very early in the transplanted fibula. At the end of two weeks the greater part of the transplanted bone is dead. There is still some doubt regarding certain zones lying close to the outer margin. That the groups of cells around the haversian canals remain alive has not been proved. It is practically certain that at the end of about one

month the last cell groups are dead, but it is possible, of course, that here and there a cell group has escaped necrosis. The greater part of the periosteum of the fibula remains alive. After a short time the rich cellular layer of the periosteum begins to proliferate. At first the outermost fibrous tissue layer is pressed upward, whereupon the cells in this situation vanish. At the same time this tissue sets up resorption in the transplant. Large lacunae are formed, and free giant cells make their appearance. The same tissue together with blood vessels and connective tissue, grows into the haversian canals, the latter widened out into large spaces in which resorption takes place.

New bone formation is now seen. Not only the surrounding bone but also the transplanted periosteum begins to form new bone. At first there is distinct difference between the new bone formed from the periosteum and that formed from the surrounding bone. The same destruction and building up occur in the bone marrow of the transplant. Thus the entire transplanted piece of bone is slowly destroyed and replaced by new bone. It is difficult to determine how long this process goes on. The specimens show that it is not completed at the end of six months.

The bed of the transplant reacts in similar manner. The formation of trabeculae begins rather early in the neighboring compact bone and is more marked on the side facing the transplant than on the upper side. Later the transplant becomes beaded in network of spongy tissue which joins a newly formed layer. The same is true of the preparations transplanted about periosteum as well as of those without periosteum. Of course, the former there can be periosteal proliferation and the entire process of destruction and rebuilding takes place from the neighboring bone. A comparison of the specimens shows that in each case the process is rapid. It is to be remembered that in the transplant without periosteum the outermost bearing tissue is not removed but requires some time for regeneration.

As regards the head of the femur the specimens show that for the most part it remains alive. It is not known definitely how much time is required for regeneration when the transplant is without periosteum as this depends on the extent of the necrosis and on friction. The cartilage of the head of the femur remains alive. It seems to be established that in man the layer of osteoblasts remains attached to the periosteum, just as in bone regeneration following subperiosteal resection of rib. Conditions seem to be the same when the transplant is taken from the tibia. I conclude the author states that fracture of the neck of the femur in ivory transplant serves as well as bone transplant. Koch (2)

Michon, L. A Contribution to the Study of Bone Transplantation. (*Contribution à l'étude de la transplantation osseuse*). *J. de chir.* 9, 11, 260.

The author has made an experimental and clinical study of the application of bone transplantation to the repair of the metacarpals and phalanges. The

clinical study was based on a case of unilateral transplantation performed by Cusko and the experimental transplant of bone was done on dogs. Cases reported in the literature are also reviewed.

The histologic examinations in the experimental cases showed large spaces between the host bone canals in which there were no osteoblasts. The disappearance of osteoblasts is certain index of the death of the corresponding part of the transplant.

Osteoblasts are found in the immediate vicinity of the perosteum, near the medullary cavity and in some of the host bone canals. Some of them are evidently disappearing, but others (especially those near the perosteum) are developing. It is possible that the latter are nourished by osseous but it must be admitted that when a segment or entire bone is transplanted, the transplant will disappear.

In the cases of aut transplantation done in the author's experimental work there was always a tendency toward absorption. Neither segment or an entire bone was used. This arose however according to the type of transplant. When there was good contact with the host bone only histologic examination showed the process of absorption, but when contact was imperfect the absorption was

marked. When an entire bone was autoplanted absorption was much slower. From these facts it seems reasonable to conclude that the agents of absorption are not cells of the transplant but remain alive and become changed into osteophages. The latter may be derived from the host bone or the connective tissue in the wound.

Mikhan findings in experimental work show that bone transplants resorb more than total autoplants die and become absorbed.

The foregoing applies to fresh bone transplant. Dead bone transplant is resorbed more slowly. If union does not occur they become encrusted and their absorption is slow.

The histologic examination shows not only that transplant dies but also that when there is intimate contact between the transplant and the host bone absorption is retarded. In the latter case the transplant persists in its first form constituting a framework for the new bone formed by the host bone. The new bone is produced by substitution of the old bone. The stage of replacement of the transplant is preceded by resorption of the bony canal.

The author applies his findings to the various types of replacement operation on the hand.

W. A. BAY

SURGERY OF THE SPINAL COLUMN AND CORD

Goettsch, C.: The Diagnosis of Transverse Diseases of the Spinal Column and "Insufficiencia vertebralis" (Schau) (Die Diagnose der transverse Wirbelsäulenerkrankungen und der Insufficiencia vertebralis (Schau)) *Arch f. Klin. Chir.* 9, 1918, 73.

The author reports the results of his studies of diseases of the spine in wounded soldiers. (1) organic diseases of the spine about nervous disturbances, (2) organic diseases of the spine with nervous disturbances, (3) functional neuroses with out organic disease of the spine.

Isolated fractures of the vertebral bodies are frequently unrecognized as the symptoms may be remarkably slight. Fractures which the vertebral processes are broken off are also often diagnosed erroneously. In many cases the breaking off of the transverse process is an indirect fracture due to sudden muscle pull and tearing. These unrecognized cases the condition is wrongly regarded as insufficiency of the spine.

The pathology of compression of the intervertebral disks is not definitely known. Measurement of the distance between the vertebrae gives some clue regarding the presence of the condition. It is very difficult to determine the loss in thickness of the disks exactly. Compression of single vertebral disk is very rare. Gunshot fractures are easy to diagnose from their results.

With regard to inflammatory conditions of the spine the author states that in cases of tuberculosis

it may be difficult to make diagnosis from the early symptoms and the question of trauma may further increase the difficulty. Chief among the chronic deforming inflammations is spondylitis deformans. This is well known and has been frequently described. It is found most commonly in the thoracic or the lumbar spine. It is a primary degeneration of the cartilaginous disk with irritation. Rechterer's chronic rigidity and Strömeyer's ankylosis of the spine are well known. Trauma is often recognized as the cause. Congenital predisposition frequently plays a role.

Injury to the spinal column with nervous disturbances, heightened nervous susceptibility to disease must be named. Functional neuroses can be associated with any kind of organic disease of the spinal column. Even slight organic changes in the spine in scoliosis are often associated with nervous symptoms. Without doubt an important role is played by meningitis serosa cerebrospinalis.

Parr's study of the pathology of the spine throws light on its developmental disturbances and susceptibility to disease. Multiple sclerosis is an important factor in diseases of the spine and organic nervous diseases. Persons with functional neuroses following accidents and without organic spinal disease are neurotic. So are especially predisposed to functional diseases. Insufficiencia vertebralis (trauma) is uninterrupted from slight nervousness to mental disease originating in trauma.

KOEN (2)

Brown, L. T. Beef Bone in Stabilizing Operations on the Spine. *J Bone & Jnt Surg* 9 19 17

Brown reports the use of a heterogeneous bone transplant, such as beef bone in stabilizing operations on the spine.

Thirty-four cases are cited, all of which were operated upon by members of the orthopedic staff of the Massachusetts General Hospital and by practically the same technique. Twenty-nine were cases of tuberculosis of the spine, four were cases of fracture of the spine, and one was a case of anterior poliomyelitis.

Twenty-one of the patients were males, and thirteen were females. Their ages ranged from 3 to 47 years. The duration of symptoms before operation varied from six months to fifteen years. In 20 per cent of the cases of tuberculosis two distinct foci were found in the spine.

The splints were made from beef ribs cut at right angles to their flat surfaces to form two cortical layers with cancellous layer between. The rib was boiled for an hour before the splint was removed. The splint was then boiled twice for an hour at twenty-four hour intervals. The operation consisted in most cases of a combination of the spine splitting and the fusion operation. The usual postoperative care was given.

In review of the cases from one to four and one-half years after the operation it was found that nineteen of the patients were in excellent condition, four had died, four were not benefited, and four were operated upon again, two because of fracture of the splint and two because of secondary foci. In three cases the splint was removed. In ten cases an X-ray examination made from one to four years after the operation showed the density of the spine and splint to be unchanged. In eight there was no change in the size of the splint. In one case slight hypertrophy of the splint was suggested. In thirteen cases the X-ray showed that the splint was in place and in five cases it revealed break; the splint.

In the cases reoperated upon no evidence of irritation or inflammation was found around the bone splint. In one case the cancellous portion of the splint was replaced by connective tissue, and in two cases the splint seemed to be attached to the spinous processes. In no case had the spinous processes become fused together. Histologic examination of specimens obtained in these operations showed no evidence of new bone formation in two cases, slight evidence in one, and active proliferation in one. The author's conclusions are:

1. The use of beef bone does not increase the operative risk.

2. The splint is tolerated by the body.

3. There are certain technical advantages in the use of beef bone splints.

4. A disadvantage of the method is that regeneration is slow.

5. The dead bone is a sequestrum.

JOHN W. FOWLER, M.D.

Bollesau, A. Libermatte, J., and Cornill, L. A Case of Complete Section of the Dorsal Cord by Direct Contusion. An Anatomical-Pathologic Study (Sur un cas de section complète de la moelle dorsale par contusion directe. Étude anatomique). *Rev. neural* 9 22 903.

Since the war various reports have shown that complete section of the spinal cord may be followed by functional recovery in the lower spinal trunk and that the automatic and reflex activity of the segment below the lesion may be indicated by a series of manifestations of great physiological interest.

The authors' case was that of a man who received a gunshot injury in June 1918 and survived until January 1921 when he committed suicide. Autopsy showed a complete break in the dorsal spine extending over two segments. After a period of absolute paraplegia with retention of urine and an anesthesia extending to the ribs which persisted for about seven months the clinical picture was modified by the appearance of defensive and automatic medullary movements, reflex micturitions, and erections. The tendon reflexes and the muscular tonus increased. Twenty days after the injury the tendon reflexes were absent but eighteen months later they were present on both sides and apparently increased.

Besides the reflexes of medullary automatism the authors noted in this case spontaneous automatic movements analogous to those in total section of the dorsal cord described by Libermatte. Eight months after his injury the man moved his lower limbs often without apparent cause but with precise synchronism every two seconds. Recovery of bladder function was indicated by the reflex micturition.

The survival of thirty-one months in this case is one of the longest on record in a case of complete traumatic section of the cord. The autopsy showed that the complete necrosis of the cord was due to direct contusion of the spinal axis caused by the passage of the projectile.

The case offers further proof that after the first period of shock or medullary coma there is a long period during which the restoration of spinal automatism is indicated by the appearance of tendinous, defensive and other reflexes. Sooner or later however the kidney are attacked by ascending nephritis. This probably would have occurred ultimately in the authors' case. W. A. BARR.

Stewart, T. G. Some Observations on the Symptomatology of Spinal Tumors and Compression. *Ann. Intern. Med.* 9 8 304.

The author describes the signs and symptoms of lesions of the various anatomical parts of the spinal cord and gives a table showing motor localization on the spinal cord and a chart showing the segmental distribution of the spinal roots.

When the spinal fluid is cut off by compression it becomes in color below the lesion from pale straw to deep green and coagulates rapidly. This may occur

also in case of spinal tumor meningitis. 1 Post disease

The lesion of an extra-meningeal lesion may be determined on the basis of the local signs of spinal deformity and root involvement and by the remote signs of changes in the reflexes.

Disturbance of the sympathetic system may be caused by lesions of the eighth cervical root or the upper two dorsal roots. The symptom may be due to irritation (ophthalmos and blushing of the pupils) or paralysis.

The author describes the symptom and different clinical groups of various forms of compression paraplegia as follows:

Leptomeningitis. The cause of this condition is generally unknown but may be syphilitic. Leptomeningitis usually occurs after the fortieth year of age. Chronic leptomeningitis with thickening may cause pressure on the cord or interfere with its circulation. The symptoms are widespread and indefinite. There is a slight degree of bilateral spastic weakness associated with difficulty in micturition, subjective sensations of numbness and tingling around the body without detectable sensory loss. The onset of the condition is gradual and progresses slowly. When there are adhesions and the cerebrospinal fluid is obstructed the dor may be distended below the constriction. Pulsion is visible above and below the constriction. The rachnoid may be adherent to the cord. A local collection of cerebrospinal fluid may form an arachnoid cyst. These cases begin with diffuse symptoms, but develop signs of definite level of compression.

Tuberculous meningitis. This condition may be due to syphilis or tuberculosis. In other cases the cause is unknown. When it is due to syphilis it is usually secondary to spinal lesions or local gummatous conditions. As a rule the cervical and lumbar spaces are affected. When the condition is tuberculous it generally results from the direct extension of spinal cancer. Root symptoms occur first and as the roots progress it is followed by weakness, muscular atrophy and loss of sensation. Cord symptoms appear 1 or three months after the onset of root symptoms. When the condition is unilateral there is Brown-Séquard syndrome when it is bilateral compression paraplegia results.

Circumscribed slowly growing intrathecal tumors. These growths are neurofibrosarcoma, fibrosarcoma, endothelioma, or meningioma. They are attached to the lateral side of the theca, to the arachnoid across roots, or posteriorly. They tend to grow in a spindle shape parallel to the cord, between the anterior and posterior roots, and inside the lateral columns.

The tumors are located in the cervical and upper dorsal regions. The course of the symptoms depends upon the part of the cord compressed. As the pressure increases typical paraplegia with motor and sensory symptoms and change in the reflexes develop. There is no sphincter disturbance when the Brown-Séquard syndrome is present but there appears when the pressure is bilateral.

Diffuse intrathecal tumors. These growths are generally sarcomata of the sacral or dorsal regions. Dorsal region tumors are usually secondary to medullary growths. As a rule the growth develops before the twentieth year of age. Root symptoms are early severe and rapid. After the development of cord symptoms the lesion rapidly becomes complete. Sacral region tumors cause perineal pain, loss of sensation in the sacral region, incontinence of urine and feces, wasting and paralysis of the lower extremities and loss of the deep reflexes.

Extrathecal growths. These include hydatid cysts, sarcomata, fibrosarcomata, endothelioma, meningioma, and lipoma. The majority arise in connection with the roots or the theca in the middle dorsal region. Fibrosarcoma, and endothelioma occur most frequently between the ages of 30 and 50 years. Lymphosarcoma and round cell sarcoma occur about the age of puberty. The spinal symptoms consist of pain in the back referred to the region of the tumor. Local tenderness and deformity of the spine are rare. No root symptoms. Cord symptoms are usually bilateral and begin gradually. Rapidly growing extrathecal tumors are usually sarcoma and carcinoma. Root symptoms are practically always present and spread rapidly from one side to the other. Bilateral cord symptoms develop soon after the root symptoms, and complete transverse cord lesion quickly appears.

Diseases of the plexus. Such give rise to compression paraplegia. These conditions are tuberculosis, sarcoma, and carcinoma. The author describes the symptoms and course of tuberculous of the spine and its relation to compression paraplegia. The tuberculous focus may compress the cord directly, the vertebral column or tuberculous pachymeningitis may be set up by the formation of adhesions between the cord meninges and diseased vertebrae. Relief of the pressure may lead to an astonishing recovery of function. Hypertrophy at and above the level of the lesion points more to an infection in this than simple compression. Carcinoma of the spine is almost always secondary usually to cancer of the breast, stomach, testis, rectum, uterus, prostate, lungs, kidneys, suprarenals or thyroid. Most metastases occur within eighteen months to five years. Metastasis may be more or less generalized affecting several vertebrae and pelvis, bones. Sarcoma may be primary or secondary and tends to remain more localized and it grows more slowly than carcinoma. Secondary carcinoma spreads rapidly. Sarcoma may press on the vertebral canal without invading the spine.

Extradural cases. Root symptoms are followed by signs of an encroachment of the same side of the cord and later by an encroachment of the other side. In the segmental form is a typical extension of the symptoms upwards in almost all cases. Cord pressure symptoms are progressive, downward sensory loss may or may not have more segmental.

Trigeminal. The symptoms are usually referred to the lumbar or cervical regions, but occasionally

ally to the bulbar. Local symptoms precede the onset of cord symptoms, but the sensory loss is different from that due to a posterior root lesion. Trophic disturbances are severe and may appear early. The Brown-Sequard syndrome is rare. Definite segmental loss is unusual but upward extension of the symptoms is common. Cord compression symptoms are frequently remote. Dislocation sensory loss may occur.

WALTER C. BRIGHT, M.D.

Adson, A. W., and Ott, W. O. The Results of the Removal of Tumors of the Spinal Cord. *Arch. Neurol. & Psychiat.* 9: 4, 530.

The results following the surgical treatment of spinal cord tumors depend upon the duration of the symptoms and the position, level, and type of the tumor. While the histories of patients with spinal cord tumors are not always constant, they suggestively indicate the first clue to the presence of such lesions. Sensory disturbances are usually the first symptoms. This is associated with motor disturbance and followed later by exaggerated reflexes below the cord segment in which the lesion is located.

The first operation for the removal of a tumor of the spinal cord is performed by Horsley about thirty-five years ago. Since then many such tumors have been removed but many have also been overlooked. The rate of progress of the disease depends on the position and type of the tumor. Intramedullary neoplasms usually progress slowly. Hard encapsulated tumors cause considerable pressure and marked paralysis in a few months. Tumors of the cord may occur in any part of the spinal canal, their average incidence being highest in the thoracic region, next highest in the cervicodorsal and lowest in the dorsolumbar region. While spinal puncture is of value in the diagnosis of extramedullary tumors, cannot be distinguished thereby from intramedullary tumors.

A review of the records of the Mayo Clinic shows that thirty patients were operated for spinal cord tumor from January 9, 1902, to April 9, 1907. Sixty-four were males and forty-eight were females.

Ninety-seven of the operations in this series were performed from 1906 to 1907, and 177 were performed from 1908 to 1910. For detailed study of the diseases, the series were divided into nine groups: (1) extradural tumor, 4; (2) intradural but extramedullary, 1; (3) intramedullary, 1; (4) chronic meningitis, 7; (5) syphilis of the spinal cord (varicose veins), 3; (6) echinococcus cyst, 1; (7) tuberculosis of the cord, 3; (8) glioma of the cord, and (9) cerebellospinal cord tumor, 1. Four of the cases of chronic meningitis, 1 case of syphilis, 1 case of echinococcus, 1 case of tuberculosis, and 1 case of glioma were found to be autopsied.

The average duration of symptoms was twenty-eight months in Group 1, forty-five months in Group 2, forty-five months in Group 3, and forty months in Group 4. The other groups are so small that a definite average cannot be obtained.

Root pain was present in eight cases (57 per cent) of Group 1, in twenty (66 per cent) of Group 2, in twenty (70 per cent) of Group 3, and in thirteen (54 per cent) of Group 4. In Groups 5, 6, 7, 8, and 9 there were four cases of root pain (44 per cent).

In fifteen cases the tumor was in the dorsal region, occasionally extending into the cervical and the lumbar areas. In eighteen cases it was in the cervical region, in nine in the lumbar region, and three in the sacral region. In twenty-three no tumor was found, the symptoms being due to inflammatory processes.

In a series of laminectomies, tumors were removed in eighty-five (76 per cent). Forty-three of the tumors (5 per cent) were removed completely, twenty-six (30 per cent) were removed partially, and sixteen were not removed. In eleven cases no tumor could be found at operation, in four of these tumors were demonstrated later. Seventy-nine patients are living, twenty-two are perfectly well and at work, seven are improved and able to do a little work, twenty-one are unimproved and not at work, and fourteen are helpless. Fifteen patients could not be traced. Seventeen died in the hospital, and seventeen died subsequently at home. The average time between operation and death was twenty years.

SURGERY OF THE NERVOUS SYSTEM

Lewis, D. and Miller, E. M. Peripheral Nerve Injuries Associated with Fractures. *J. Surg.* 9: 101, 538.

Nerve injuries are associated with fractures much more frequently than is generally supposed. They are overlooked because of haste and incomplete examination of the fracture.

The injury arises from the slightest contusion from which the patient rapidly recovers. Anatomical division and callus formation both demand surgical interference.

It is often impossible to differentiate even between physiological interruption of the nerve current and anatomical division of the nerve by the most careful

neurological examination, and there is a tendency to wait too long for spontaneous recovery.

When recovery has not begun within three months after the injury the injured nerve should be explored and any necessary operation performed.

Neurolysis is the operation which is most frequently required. Resection of the humerus should no longer be done to permit end to end suture of the musculospiral nerve. In such cases tendon transplantation should be performed.

The prognosis of injuries of the musculospiral nerve is very favorable.

In the late ulnar nerve palsy with cubitus valgus transposition of the nerve to the front of the elbow

indicated. When bony outgrowth came paralytic, their removal and the placing of the nerve on a healthy bed may be sufficient.

II A. MICKENRUM M.D.

Ott W. O. Experimental Results of Cable Graft and Tubes of Fascia Lata in the Repair of the Peripheral Nerve Defects. *Minor N. Vol. 91* 38

Experiment were conducted for the purpose of comparing the rapidity and completeness of regeneration obtained by the method of bridging defect in peripheral nerves, the use of cable graft and the use of fascial tube graft. The results were compared also with those obtained by end-to-end suture. Twenty-six experiments were conducted, including four controls with end-to-end suture. Twelve experiments cable graft of an autogenous sensory nerve was employed and in seven there tube of autogenous fascia lata. The length of the gap bridged by the cable graft and the tubes of fascia lata was the same.

The operations were performed on dogs under ether anesthesia and with sterile technique. The sciatic and musculospiral nerves were used. In the control experiments of resection and suture the nerves were exposed and sectioned with sharp scalpel and immediately sutured with fine silk. In the experiments with cable grafts the nerve, as exposed 4 cm portion resected, and an autogenous cable graft of several strands of the superficial radial or the internal cutaneous nerve or both as inserted. The size of the graft as never less than three-fourths that of the nerve, but which it was introduced very fine silk, one third of a strand of No. 30 phasex silk on No. 1 cambay needle was used. Usually two tubes were placed at each end of each strand in order that the fascial of the graft might accurately approximate those of the nerve into which the graft was inserted. Fascial tubulization the method described by Stark and Lewis as followed. The smooth side of the fascia lata taken from the same dog was placed thus to form the lining of the tube. The box of the tube was made to fit that of the nerve exposed.

The animals were examined often, the time of the disappearance of paralysis, the healing of ulcers, trophic of muscles, etc. being noted. Animals with infected wounds are discarded (necropsy).

performed soon after death on those that died from causes not affecting the conditions of the experiment. Those that lived until the termination of the experiment were killed under ether. The animals were etherized, the muscles supplied by the nerve experimented on were exposed by reflecting the skin and the degree of trophic muscle tone, color, power of voluntary motion, and response to electrical and mechanical stimuli were noted. The nerve proximal and distal to the graft as well as the graft, was diverted free the nerve as 1.5 to 5 cm proximal to the graft, and mechanical, galvanic and radio stimulation as applied to the cut end

of the distal segment. After these examinations had been completed the animals were killed with ether and the nerves removed for microscopic study.

Of interest in the four control experiments in which resection and suture were done were: (1) the absence of adhesions around the suture line, (2) the normal appearance of the animals after from four to six months and the healed condition of the ulcers, (3) the absence of muscular atrophy, (4) the normal response to pinching and electrical stimulation applied to the isolated nerve proximal to the suture line and (5) the normal microscopic picture of the nerve distal to the suture line.

In the eleven experiments in which gaps were bridged by cable grafts the animals progressed well, but not so well as those in the control experiments with end-to-end suture. The ulcers healed, the paralysis disappeared, and the animals apparently became normal after from eight to ten months. In seven instances the estimated return of action after three hundred and thirty-four days or longer was not 85 per cent. Proximal neuromas were present in all cases but were smaller than in experiments with fascial tubes. Adhesions to the graft were few and fewer than in the experiments with fascial tubes. Fibrous tissue in the graft was not seen microscopically, the spaces between the fibers were filled largely with loose areolar tissue.

In the eleven experiments with fascial tubulization all the animals remained paralyzed and the ulcers were unhealed. In thirteen instances in which the animals lived more than three hundred and thirty-four days the estimated return of function was 5 and 10 per cent respectively. The proximal neuroma was very large in every case, adhesions to the graft were dense and firm, and the graft could be separated from the surrounding tissues only with difficulty. Large amounts of fibrous tissue were seen microscopically along the graft, in most of the old cases a much as 75 per cent of the area of a cross section made up of fibrous tissue.

In the three experiments with fascial tubulization it appeared that in late stage the fibrous tissue which had proliferated inside the fascial tube and the fascial transplant contracted and strangulated the enclosed nerve fibers, thus preventing the complete return of action to the nerve. This process explains the failure of fascial tubulization clinically and may prevent the return of action when cable grafts were used, especially if the graft was placed in a bed of scar tissue.

The conclusions drawn are as follows:

1. Experimentally, autogenous cable graft over a gap of 4 cm results in satisfactory return of function, they require longer time than end to end suture and the return of action is not so complete.

2. Tubes of autogenous fascia lata used to bridge gaps of 4 cm result in delayed and incomplete return of function, if any at all.

3. Regeneration takes place through the fascial tubes. At first the nerve elements are abundant, but later they are largely replaced by fibrous tissue.

McGuire, E. R. and Burden, J. F. An Unusual Case of Sarcoma of the Median Nerve. *Surg Gynec & Obst* 9 NOV 453

The patient was a woman aged 40 years who had been perfectly well until five years previously when she noticed swelling on the anterior surface of the right forearm, midway between the wrist and the elbow. This swelling was not painful or tender. Five weeks before admission to the hospital, the arm began to swell in the region of the tumor, this swelling continuing until the arm was half again as large as the left arm and severe pain developed.

Operation disclosed mass 8 in in diameter involving the median nerve. The nerve was divided at either end of the tumor and removed. The resulting gap measured more than 9 in.

The tumor was diagnosed on microscopic examination as a rapidly growing, irregular spindle cell sarcoma originating in neurofibroma.

Five weeks after the primary operation the patient returned with another swelling at the site of operation. An incision was made for diagnosis and another sarcoma found.

After extensive X ray treatment it was necessary to amputate the arm. The second tumor was also a spindle cell sarcoma. H. A. McKimsey, M.D.

Linell, E. A. On Solitary Fibromyosarcoma of Peripheral Nerve Trunks, with a Description of Case of Cystic Fibromyosarcoma of the Median Nerve. *Br J Surg* 93 1, 29

The patient was a woman 4 years of age who had a lump in the right arm which had been growing gradually for four years. When first noticed, the growth was the size of a hazel nut but at the time it was seen by the author it was as large as a pigeon's egg. The only symptom was occasional shooting pain from the site of the tumor down into the middle finger.

Examination revealed well defined, painless, fusiform swelling on the antero internal aspect of the upper arm slightly above the internal condyle of the humerus. The tumor was freely movable laterally but not in the long axis of the limb. It was unattached to the skin, and elastic to the touch, but fluctuation was not demonstrated. Its essential connection with the median nerve was not considered on account of the complete absence of motor and sensory symptoms. From its proximity to the line of the nerve it seemed reasonable to ascribe the shooting pains in the median area to pressure. A diagnosis of soft fibroma arising from the deep fascia was made.

At operation, November 1931 the tumor was removed. Both resected ends of the nerve appeared quite normal. End to end anastomosis was done with the elbow flexed, and the arm then maintained in this position.

At the time this report was written sensation was beginning to return but there was as yet no evidence of motor recovery.

The author discusses the histology of the tumor and shows six photomicrographs of various areas.

A brief historical survey of solitary fibromyosarcoma of peripheral nerve trunks is given.

The conclusions drawn are as follows:

A hemorrhagic cyst of spontaneous origin arising in a peripheral nerve may be benign.

In the absence of more definite evidence of sarcoma, such as infiltration of the nerve above and below the lesion or adherence to surrounding structures, it would have been advisable in the case reported merely to puncture the cyst and remove as much as possible of its wall without interfering with the continuity of the nerve bundles, thus avoiding the risk of incomplete regeneration after resection and end to end suture.

CARL R. STEDICK, M.D.

Gomoun, V. The Surgery of the Sympathetic Nerve (Sympathectomy). *Spatial* 93 21, 54

Gomoun briefly describes the very poorly known physiology and pathology of the sympathetic nerve and the cervical sympathectomy first done by J. Jaboulay in 1896 which was later applied with different results by Jonnesco as total and bilateral resection of the cervical sympathetic in Basedow's disease, epilepsy and glaucoma.

Gomoun states that the surgery of the sympathetic nerve ought to be better known in Roumania as the cervicothoracic sympathectomy also was done first by Jonnesco and himself (both Roumanians) in the year 1906. The patient, who had angina pectoris, has remained well up to the present time. The abdominal sympathectomy was done by Jaboulay in 1897 and later by Leriche and Harsen. Gomoun, in the year 1904, was the first to extirpate the sacral ganglia, an operation he called "sclerectomy" and applied successfully to the treatment of tabetic crises. The sacral sympathectomy has been practiced with varying results by Jonnesco since 1914 in vaginismus, sciatica, lightning pains, and tabes, and was applied with the best result by Gomoun for the relief of pelvic pain due to inoperable cancer of the uterus.

STOLANOFF (Z)

MISCELLANEOUS

CLINICAL ENTITIES—GENERAL PHYSIOLOGICAL CONDITIONS

Kirch, E. Observations on Cystic Xanthomatous Tumors and the Genesis of Xanthomatous Tumors in General (Ueber cystische xanthomatoese Geschwülste und die Genesis der xanthomatoesen Geschwülste im allgemeinen). *Beitr path Anat allg Path* 1911, 112, 75

The author has observed two interesting cases of xanthomatous blastoma, one that of a man 39 years old and the other that of a woman 7 years old. In the first case the tumor which was the size of a goose egg, developed on the medial aspect of the right knee. In the second case the neoplasm was fungous growth the size of a hen egg, on the outside of the left knee.

Both tumors had a cystic character. Their xanthomatous nature was evident macroscopically from the peculiar sulphur yellow and rust brown marbled appearance of the sections. Histologic study revealed a structure consisting of elements, one sarcomatous and the other lymphangiomatous, the latter leading to the formation of cysts. The foam cells characteristic of xanthoma had their origin in the lymphoid endothelium.

In the first case considerable increase of the cholesterol content of the blood, as demonstrable. Unfortunately similar test as responsible in the second case. As disturbance of the cholesterol metabolism is already present in cases of xanthomatous blastoma, the author believes that similar favorable conditions in preexisting tumors, such as the lymph glands in the lymphangoma in both of his cases, xanthomatous transformation of certain kinds of cells occurs as the result of the deposit of cholesterol fatty acid esters, and that thereby blastomata may be transformed secondarily into xanthomatous tumors. Linnæus (7)

Shaw-Blackensale, J. A. A Study in the Diagnosis of Cancer by Means of Serum Reactions. *Lancet* 9, 1911, 159

This article draws attention to a new test for cancer based on turbidity reaction in the serum. Saponified and ether extracts of cancer tissue were added respectively to the serum of patients who were suffering from cancer and the sera then incubated at 37 degrees C for fifteen hours. They thereupon formed permanent emulsion or precipitate, cloud or the trace of cloud in the serum. As a rule the ether extract was diluted with pure sodium chloride solution. Normal serum did not give the cloudiness mentioned.

This test is similar to that of Freund of Vienna which is based upon the observation that the isolated cells of carcinoma are dissolved by normal serum whereas the normal cells are resistant to carcinoma serum. The same is true of sarcoma. The destruc-

tion of the normal serum on the cancer cell is attributed to its fatty acids. The latter are not present in carcinoma serum.

The test was used on 136 persons, fifty-eight of whom were normal. Only 1 positive report was not confirmed, one as a case of diabetes and the other a case of neurosis. P. W. Sweet, M.D.

SERA, VACCINES, AND FERMENTS

Chiari, O. M. and Garopler E. The Galvanic Excitability of Motor Nerves Following the Parenteral Injection of Heterogeneous Serum (Ueber das Verhalten der galvanischen Erregbarkeit der motorischen Nerven nach parenteraler Einverleibung artfremden Serums). *Deutsche Zeitsch f Chirurg* 1911, 112, 165

In a number of cases a pronounced sickness followed a single subcutaneous injection of serum equivalent to 1 cm of tetanus antitoxin, and there was also an abnormal condition of excitability in various muscle groups, the form of tonic clonic contractions. The course of the three cases in which these symptoms were most marked is reported.

In the first case the facial expression and trismus suggested tetanus, but ruling out this condition was the fact that the trismus appeared simultaneously with the serum exanthem and the fact that the symptoms disappeared without remedial measures. In the second case there was the possibility that the patient had had local tetanus a few years previously following an injury and that after second injury he developed an exactly similar condition after an injection of serum as he did when treated by the author. The third patient developed marked swelling of the arm after the injection and became unable to separate the joint normally the patient had also been given horse serum.

These observations led to a re-examination of number of other patients who were given prophylactic injections of tetanus serum. Reactions as marked as those in the three cases described were not seen, probably because the sera used subsequently were somewhat stale and therefore had partly lost their anaphylactic effect.

The other examinations included the testing of the galvanic excitability of muscle (the determination of the threshold value of the cathode closure contraction) on percutaneous stimulation of the nerves, and the observation of Chvostek's facial nerve phenomenon and of the ulnar and peroneal nerve phenomena. After the first injection of tetanus serum and after re-injection, the galvanic excitability and frequently also the mechanical excitability of the muscles was increased. The tetany and the duration of this hyperexcitability are subject to variations. Occasionally the condition is demonstrable only transiently. In general it seems to be proportional to the other symptoms of serum disease, but it appears

also as the only symptom of the action of the organism to the injection of serum.

The behavior of the threshold values of the galvanic excitability is very constant, viz. a rapid sinking following the injection of the serum and a gradual increase, protracted over a number of days to the average value. The paracutaneous injection of heterogeneous serum is considered to be the cause of this change in the galvanic excitability. The other disturbances observed after the injection of serum are easily correlated with the recognized anaphylactic reaction to which the described increase in the galvanic excitability of nerves must be added as a new symptom of serum disease. It may possibly explain also the aggravation of the condition of patients with tetanus which often occurs immediately after the injection of the serum. GUTMAN (Z).

BLOOD

COLESCU, A. A Simple Procedure for Testing the Circulation in Gangrene of the Extremities (Ein einfaches Verfahren zur Prüfung der Zirkulation (sino-motorischer Strich) bei Gangren der Extremitäten). *Spitalul* 9, XII, 384.

The question whether or not amputation should be done in gangrene of the extremities is often very difficult to answer. In 1907 MOSCOWITZ introduced oenometry as a method of ascertaining the condition of the circulation. In spite of the value of this procedure, however it is necessary to seek for another as it is very painful and in some instances appears to make the circulatory condition worse. The author has tried out the following procedure, which he designates as the test with the vaso-motor streak.

With the patient standing up or lying down, a continuous line is traced from the proximal to the distal end of the affected extremity with a blunt instrument. After brief period of pallor in this line the well known red vaso-motor streak appears. If the limb is normal, the streak appears quickly and the coloring is bright and of the same intensity throughout. If the red streak stops suddenly at any point, there is no circulation below that point.

If this test is made on the four sides of the extremity it gives an exact circular demarcation of the tissue which is well supplied with blood from that which is poorly supplied. Amputation at the limits indicated by the test almost always resulted in primary healing; in no case was re-amputation necessary.

The author suggests that this procedure might be of value in indicating the site of an embolus.

WOLGAST (Z).

BLOOD AND LYMPH VESSELS

MOROSOFF, B. D. The Conservatory Treatment of False Aneurysms (Zur konservativen Behandlung der falschen Aneurysmen). *Revue Med. Russe*, Journal 9, I, 1911, p. Nos. 2-3, 9.

The author has devised an apparatus for tomographic pressure which is applied over the injured

vessel (femoral artery) above the false aneurysm. In one case it was possible to decrease the size of a fresh traumatic aneurysm in Hunter's canal by daily pressure for from six to eight hours. PATROW (Z).

SENACET, L., and BLUM, F. A Case of Arteriotomy for Embolism of the Axillary Artery Followed by Complete and Definite Recovery (Un cas d'artériotomie pour obstruction embolique de l'axillaire suivi de guérison complète et définitive). *Bull. Acad. de Méd. Par.* 9, LXXVIII, 84.

From a study of all reported cases of operative clearance of embolized arteries Leparo in 1911 concluded that this treatment is of little value. Soon thereafter MOSNY and DUMONT reported the first case of embolotomy followed by complete success. SENACET and BLUM in this article report a second similar case.

The patient was a man aged 58 years whose right arm was completely immobile, paralyzed, and without the least sensation. The condition was diagnosed as embolism of the axillary artery with complete obliteration of the vessel. An arteriotomy with resection of the embolus was decided upon. The artery was opened in the subclavicular region after section of the pectoral muscles. On dissection of the vessels several collaterals in the vicinity were found enormously distended. The embolus was near the inferior scapular artery at the base of the axilla. The axillary artery was ligated above and below the embolus. An incision about 1/4 cm. long was then made in the vessel at the embolus but no blood escaped, the lumen being completely occluded by a clot. The clot removed was 4 cm. in length.

When the ligatures were loosened there was still no flow of blood. The incision was therefore extended upward. A second clot, or rather another part of the first one, was then found. This also was extracted through the wound. It was of the same size as the first portion. Immediately following its removal the blood flowed abundantly in spite of the ligature traction. After careful suturing of the arterial breach the ligatures were removed. The radial pulse appeared immediately full and strong an hour later the cyanotic and paralyzed limb was warm and colored. For several days there were some minor Volkmann symptoms but ultimately the result was perfect and the blood pressure the same in both arms.

W. A. BURN, A.

EXPERIMENTAL SURGERY AND SURGICAL ANATOMY

KROSS, I. Parabiosis and Organ Transplantation. *Surg. Gynec. & Obst.* 922, XXV, 495.

The problems in connection with tissue and organ transplantation have interested workers both in the laboratory and in the operating room. The many failures occurring in the earlier period were due to the lack of asepsis, improper technique etc. but when all these factors are eliminated there still remains the unmountable obstacle prevented by

the absorption of the graft. In a great many cases in which the technique was flawless and the asepsis beyond question, a transplants of entire organs have been successful. Auto homografts have failed.

From the results obtained so far it may be concluded that the graft acts as a foreign body and meets with the same treatment from the host. The theory upon which the study reported in this article was based is that a parabiotic union removes the chemobiological differences between two animals of the same species and makes the tissues of a graft taken from one of them bear the same chemobiological relation to the host as the host's own tissues.

Experiments were carried out on young adult rats of approximately the same age and weight. During the course of the parabiotic operation frequent fatal complications were encountered, such as intestinal obstruction, pneumonitis, and undernutrition with starvation of one of the pair. Ten days after the parabiotic operation the graft itself was transplanted. Half of one lobe of the thyroid gland was excised and inserted into a muscle pocket in the anterior abdominal wall of the other animal. This pocket was carefully prepared prior to the excision of the thyroid in order to reduce to a minimum any possible injury to the latter by drying or too much handling. The pocket was then closed in two layers, muscle and skin. Closure of the neck wound completed the operation.

Forty-four pairs of animals were used in the experiments. Of these, three pairs died before transplantation of the thyroid tissue, five pairs were lost, and seven pairs were decomposed to such an extent that histologic findings were worthless. This left thirty-two pairs for study. Of this number twelve pairs showed absolutely no trace of the implanted tissue.

Two series of autografts and homografts were made, and sections of the thyroids from the parabiotic animals were studied with these. With the exception of the graft in one pair all the grafts showed marked lymphocytic infiltration with very little apparently normal thyroid substance remaining. Therefore the parabiosis did not neutralize the chemobiological differences, if anything, it seemed to make them more intense.

As the result of his experiments Kross concludes that parabiosis does not inhibit those unknown agencies which in so many instances, interfere with the success of homografts of highly developed organs such as the thyroid. GROSS, E. BERNER, M.D.

Meyer, J. and Ivy, A. C. Studies on Gastric and Duodenal Ulcer. The Relation of Epigastric Hernia to Gastric Ulcer—a Clinical and Experimental Study. *J. Lab. & Clin. Med.* 9, 12, 37.

The authors' interest in the relation of epigastric hernia to gastric ulcer was first aroused by the case of a man 35 years of age who complained of pain in

the epigastrium, belching, and constipation occurring regularly two hours after meals. This patient was kept under observation for some time and also on the ulcer treatment recommended by Sippy but at the end of six weeks no improvement was noted. An operation to correct the hernia revealed a small globular mass of preperitoneal fat continuous with the omentum which protruded through a small defect in the linea alba and was adherent to the parietal peritoneum. Gross inspection of the stomach showed no evidence of ulcer. The appendix, which was also removed, was normal. Two years have elapsed since the operation and the patient is still free from symptoms.

In their experiments the authors employed four-teen dogs. In each animal an epigastric hernia was produced. During the course of the experiments the occurrence of a pocket formation in the wall of the stomach was noted. Thus, the authors suggest, might be regarded as an area of lessened resistance and a potential site of ulcer. I mean it could be of greater importance because of its upright position and therefore in man might lead to the formation of an ulcer more readily than in the dog. Gastric ulcer is very infrequent in dogs and it is difficult to produce a chronic ulcer in a normal dog experimentally. The pocket formation described has either never occurred in man or has never been reported.

The authors prefer to believe that the association of epigastric hernia and gastric ulcer is merely accidental. The incidence of such an association (3 per cent) they explain by the supposition that cases of this kind are reported because of their interest whereas cases of epigastric hernia without proved ulcer are not reported because they are relatively common.

The character of the distress in the experiments was particularly interesting because a gastric ulcer was not present. The pain was almost identical with that of gastric ulcer being dull, gnawing and intermittent. It occurred in the epigastrium one or two hours after meals, and was relieved by soda and food. One investigator ascribes the genesis of this pain to the tension exerted on the herniated omentum by the vigorous contractions of the stomach which occur intermittently. The authors concur in this opinion and believe that it is supported by the fact that alkalis relieve both types of pain, the pain of gastric ulcer and that of epigastric hernia with omentocoele, inhibiting the vigorous tonic contractions. These contractions begin one to two hours after meals, continue until the stomach is empty and then disappear until hunger period ensues. The theory mentioned is further supported by the fact that coarse food excites and increases the pain in cases of epigastric hernia.

In making summary of their work the authors state that they are unable to demonstrate experimentally in dogs that epigastric hernia with omentocoele is a causative factor of gastric ulcer. They suggest that the tendency to local pocket formation in the wall of the stomach brought about by the

tugging of the omentum may be an etiological factor of gastric ulcer in man. They believe that the association of gastric ulcer and epigastric hernia in man is accidental, the hernia having no direct etiological relationship to the ulcer. Epigastric hernia does not cause hyperacidity; the gastric findings in such cases are within the normal variation. In cases of epigastric hernia with gastric symptoms operative treatment is indicated definitely.

GEORGE E. BIRLEY, M.D.

ROENTGENOLOGY AND RADIUM THERAPY

Kirklin, B. R. The Roentgenological Study of the Pathologic Gall-Bladder. *Am. J. Roentgenol.* 9, 12, 713.

A large number of gall-stones cast no shadow in the roentgenogram, not even as much as the bile in which they are contained. George has called attention to the fact, however, that while a single stone may not cast a shadow, several stones have a density which, with the changes in the gall bladder wall, produces a characteristic shadow easily recognized when a reasonably good technique is used.

The normal healthy gall bladder is not visible in the roentgenogram. Therefore when it can be recognized definitely it is pathologic. It is enlarged, its walls are thickened, the bile is darker in color (which means increased density) or there are stones in the gall bladder or ducts. When a good X-ray technique is used any of these conditions will cast fairly dense and easily recognized shadows.

To obtain additional evidence of gall bladder pathology such indirect evidence as may be obtained with an opaque meal may serve to corroborate the direct findings, or in the absence of the latter may give information of a nature to aid greatly in diagnosis. In some cases the gall bladder may cause pressure upon the duodenum or the antrum of the stomach, displace the jejunum and the colon, or cause deformity of the first portion of the duodenum by adhesions, hepatization of the stomach due to pericholecystitis with adhesions or deformities of the hepatic flexure. The emptying time of the stomach following a barium meal is usually much shortened when the gall bladder is diseased.

The technique of the X-ray examination of the gall bladder is as follows:

The patient is instructed to take a dr. of compound licorice powder each night for two or three nights previously, and to eat no evening meal the day before and no breakfast on the morning of the examination. From two to four exposures of the gall bladder region (including all the area between the crest of the ilium and the tenth rib) are first made; the penetration, time, etc. being varied but care being taken that the dark-room assistant develops all the films for the same length of time so that they will be of different densities. A barium meal is then given in the fluoroscopic room and careful search made for indirect signs. Other gall bladder exposures are made to discover any adhesions

pressure involving the stomach and duodenum, or other findings which might have been missed in the first series of films. The hepatic flexure of the colon is studied at eighteen to twenty-four hours.

During the past twenty-eight months a complete roentgenological gall-bladder study of 718 patients was made. Roentgen-ray evidence of gall-bladder pathology with or without stones was reported in 53 cases, approximately 35 per cent. The operative findings in 4 of these cases were also studied. The surgeons reported that the gall bladder was normal to palpation in seven of the cases in which positive roentgenological findings had been reported and pathological in six of those in which negative roentgenological findings were reported. In other words, the roentgen ray conclusions were confirmed in all but fourteen cases, or in approximately 93.5 per cent.

The author's experience leads him to the conclusion that careful roentgenological investigation of the gall bladder region should be made in every case referred for abdominal study.

ADOLPH HARTMAN, M.D.

Lain, E. S. Treatment of Cancer of the Lip by Radiation. *Arch. Dermat. & Syph.* 9, 1, 434.

This is a brief presentation of the results in 248 consecutive cases of cancer of the lip treated by the author with the roentgen ray and radium. In his private practice between 1909 and 1917. The diagnosis was made largely from a clinical rather than a biopsy examination. Most of the cases were of the prickle- or squamous cell variety.

Since about 1915 these cases have been classified into three groups, according to the location of the lesion upon the lip and the degree of its development which largely indicate the prognosis.

Group 1 comprises those lesions which are situated wholly on the cutaneous border of the lip, are not deeply indurated, and are without palpable or other evidence of metastasis in adjacent glands.

Group 2 consists of those in which the lesion most commonly overlaps the mucosa of the lip and is deeply indurated, and the adjacent submental or submaxillary glands are palpable. This group includes also a few cases of recurrence following previous treatment by the application of caustics or surgery. In Group 3 are cases of obvious metastasis in more than immediately adjacent glands. Approximately this entire group is composed of patients who have tried repeatedly other methods of treatment and whose condition is hopeless so far as a final cure is concerned.

In the treatment no invariable routine was followed except as regards certain proved or unquestioned procedures. One of the latter was the radiation of the submental and submaxillary glands with hard or gamma rays in all cases of cancer of the lower lip. The treatment of metastasizing areas was given in most cases by the roentgen ray with milliamperage of from 5 to 50, spark gap of from 6 to 10 in an anode distance of from 8 to 15 and

filters of from 1 to 4 mm of aluminum. Later from .25 to 0.5 mm of copper was added and the radiation was given for from twenty minutes to one hour at each position. During the past two or three years, the glands have been given a dose of 100 k.v. 5 ma. at a focal distance of from 6 to 8 in. for twenty-five to forty-five minutes, this treatment being repeated as indicated in six weeks.

The author is fully convinced that two or three properly timed and filtered doses of radium at intervals of a few days are more destructive to any type of cancer cell than the total given at a single exposure. The so-called fractional dose, with either the roentgen ray or radium, is much to be feared, although it is more successful if a nearly lethal instead of a stimulating dose for the pathologic cell is given each time. The destruction of certain cases of early basal cell cancers situated externally on the lips or elsewhere may be more rapidly accomplished, and without an objectionable scar by the use of the combined hard beta and gamma rays than with the gamma ray alone.

The technique used in a certain type of case of Group 1 in which there was proliferating keratotic elevation with only mild degree of infiltration, consisted, first in the application of 0- or 30-mg. plaque screened with .3 mm of aluminum for period of two or three hours. After ten or fifteen days this caused reaction which as followed after twenty or thirty days by degeneration and perhaps an exfoliation of all superficial pathologic cells. Before this reaction began or immediately after the first application, a plaque of from 1 to 30 mgm. was applied with screening of .3 mm of brass for eight to twelve hours. This filter permitted only about 5 per cent of the hardest beta rays to pass and yet utilized all the gamma rays for deeper effects. The deeper effects, which were produced in from four to six weeks, consisted in a perceptible softening and possibly complete disintegration of the deep cellular structures of cancerous nature.

In the treatment of Group 2, lesions of deeper and more extensive development, or of the squamous or the prickly-cell variety, 10- or 30-mg. plaque of radium screened with .3 mm of brass was first applied over the lesion for from ten to fourteen hours and then reinforced within a few days by pack of from .00 to 160 mgm. of radium screened with .3 mm of brass and placed on pad of gauze from 1 to 3 cm in thickness. This pack as placed over regions of possible metastasis for total of from fifteen to twenty hours and the application as repeated within a few days until a total of from .000 to 3,000 mgm.-hrs had been given.

In certain cases of indurated or deeply nodular cancers of the lips the application of the plaques was followed by the insertion of as many radium needles from 1 to 4 cm apart as were necessary thoroughly to radiate the entire area of the cancerous growth. These are left for from three to five hours.

In the treated cases which belonged to Group 1 the percentage of cures was 93+ in Group 2

is noted that since the use of the more recent and much improved methods of radiation with heavy kilo voltage and radium packs or when radium needles are inserted into the glandular metastasis the percentage of cures falls not far short of that in Group 1.

The author draws the following conclusions:
The cellular morphology of cancer of the lip has less importance in the prognosis than the location or degree of the development or the age of the patient. A prickly- or squamous cell cancer in the early stage of its growth will undergo degenerative changes under radium or roentgen ray radiation just as does the basal cell, merely differing only in the amount of radiation necessary and the technique of its application. Statistics verified by both clinical and laboratory findings now justify the conclusion that cancer of the lip is perhaps more amenable to treatment by the roentgen ray or radium than by surgery and in most cases radiotherapy 1 to be preferred.
ANDREW HARTMAN, M.D.

Finckler, G. E. Cancer of the Lip Treated by Electrocoagulation and Radiation. *Arch. Dermatol. Syph.* 9: 1143.

In the latest stages of cancer of the lip neither radiation nor electrocoagulation nor any other form of treatment can be expected to cure. For successful results cancer of the lip must be treated early and thoroughly. Thorough treatment means radiation whatever other method is used in addition. As prophylactic measure every point of irritation affecting the lip should be removed. If thorough treatment is given in the early stages, practically all cases will be cured.

The author has treated 15 cases of cancer of the lip in his private clinic. Eighty of them were primary, twenty recurrent and five postoperative. Of the eighty patients with primary lip cancer, seven have recovered and four have remained well from several months to eighteen years. Three died of continuation of the disease, and two have had recurrence. The result in the other cases is unknown. Of the twenty patients with recurrent cancer of the lip, only eight recovered. The five patients given postoperative treatment have remained well, though none was subjected to block dissection.

Much depends on the promptness and thoroughness with which these patients are treated, but in part at least the outcome depends also on the nature of the cancer and the degree of its malignancy. The effect of radiation must be prompt or failure is apt to result. Thorough radiation by means of the roentgen rays from the very beginning and by radium when it can be combined to advantage is most important.

Selection of cases is necessary to determine whether radiation should be combined with electrocoagulation. If the lesion is small and its removal will not cause too serious defect in the lip, destruction by electrocoagulation will be followed by

more prompt and more satisfactory results than radium alone. By such destruction the diseased tissue is macroscopically removed in much the same manner as the surgeon removes it with the knife, but the blood vessels and lymph channels are not opened. If the cancer involves the entire lip or even half of the lip, such preliminary destruction by electrocoagulation is impractical unless some means of closing the mouth by a subsequent plastic operation can be foreseen. Generally speaking, thorough trial should be made first with applications of radium in advanced primary cases. If radium is skillfully applied, good results may be expected. In some cases, however, only marked temporary improvement may occur, stage being then reached in which the disease is at a standstill or begins to progress in spite of radium. At this stage, complete and thorough local destruction or complete surgical excision is probably the only procedure possible.

Electrocoagulation consists in the coagulation of the diseased areas by means of the high frequency current. This current is not selective in its action, and will destroy the tissues radiating outward from the point of application. It cannot be used in areas in which essential structures, such as important blood vessels or nerves, are located in the line of destruction. Beyond the actual coagulation there will be zones which will be superheated sufficiently to destroy any cancer cells, but not sufficiently to destroy the healthy tissue. The defect after the patient is well does not nearly equal the amount of diseased tissue removed. There is, apparently, a regeneration of a part of the tissue removed. The heat is generated in the tissues. It is the penetrative value of this form of heat that makes it more desirable than that obtained by the thermocautery which destroys only by transmitted heat and therefore is essentially more superficial in its effect.

Radium is indicated in all cancers of the lip whatever other treatment is used, and sufficient radium must be employed actually to destroy the cancer cells. If patient is to be operated on surgically, preliminary radium with full erythema dose should be given over the lip and chin and in the submental and submaxillary spaces and similar radium should be given after the operation and two and three weeks after the preliminary treatment. The patient should then be kept under observation for several years, and more radium should be applied if there is the slightest sign of recurrence. The same type of radium should be added to electrocoagulation and can be applied most practically by means of the roentgen ray.

For this purpose the author uses a 9 in. spark gap with 5 ma. of current through 6 mm. of aluminum filter at distance of 30 cm. for twenty five minutes. The time must be governed by the radiation value of the instrument used.

If sufficient radium and sufficient skill in its use are available, most, and perhaps all, local cancers of the lip can be cured. This treatment will require

more time, more skill, and more patience than the combination of electrocoagulation and radium, but there will be more preservation of tissue and a better cosmetic result than can be obtained by any combination with surgery or electrocoagulation. If radium is to be used for the local destruction of the cancer with preservation of the tissue, the local tissues must be kept saturated to the limit of toleration of the normal structures until the cancer entirely disappears. The submaxillary regions can be treated by surface applications properly screened.

If metastatic nodules are palpable, they should have preliminary radium as described and should then be dissected out or treated by the insertion of radium needles sufficient to destroy the disease. Radium needles of 1 mgm. each may be inserted 1 cm. apart throughout the diseased area and left in place for eight hours.

The author draws the following conclusions:

Any fissure or crust on the lip which persists longer than a month should suggest malignancy.

Local destruction by electrocoagulation followed by thorough radium should effect a cure in practically all cases if it is done early.

3. Thorough radium by radium or the roentgen rays should be given over the lymphatics draining the diseased area.

4. In cases of recurrent carcinoma the results are much less satisfactory.

5. Metastatic lymph nodes should be treated by surface radium and then by radium implantation or excision.

ADOLPH HARTUNG, M.D.

T. Ossig, L. Carcinoma of the Tongue and Its Treatment with Radium. *Arch. Dermat. & Syph.* 9, 2, 434.

Cancer of the tongue is seen most often between the fourth and sixth decades of life and is much more common in men than in women. It occurs most frequently on the side of the tongue. Pathologically it is practically always of the squamous cell type. Among the etiological factors, syphilis and trauma produced by rough teeth and the use of tobacco are of prime importance. Since it is often preceded by such conditions as leukoplakia and chronic ulcer the prompt and thorough treatment of such lesions may prevent its occurrence. Every effort should be made to differentiate it from syphilis and tuberculosis. At times this differentiation is difficult.

Operation, which has been the accepted form of treatment, is very mutilating, has carried a high mortality even in the most skilled hands, and has given few cures. During the past few years a number of physicians have treated cancer of the tongue by electrocoagulation, usually in conjunction with radiotherapy. In capable hands, these methods have frequently given satisfactory results.

The treatment of carcinoma of the tongue with radium has many advantages. In the first place, there is no primary mortality. Secondary death, due to hemorrhage or infection, is far less common after radium treatment than after surgery. A

palliative result can be obtained in the majority of the cases with radium treatment. On the other hand, even if the patient survives operative treatment speech is greatly impeded, the patient is able to eat only with great difficulty and there is frequently increased rapidity of growth of the neoplasm. It is still impossible to estimate the percentage of cures obtained by radium because the method has not been in use long enough and because the majority of the cases seen are those which the surgeon considers hopeless. The great disadvantage of radium in these cases is the painful reaction. It is impossible to estimate the severity of this in advance. In some cases the period of reaction was short and the healing of the ulcer and softening of the lesion were prompt. In others, the amount of suffering was out of all proportion to the extent of the lesion and the clinical appearance of the reaction. No satisfactory method of combating the reaction has been found.

The ideal method of treating these cases consists in inserting tiny unencased tubes of radium emanation as described and first done by Jarrold and Quirk of the Memorial Hospital of New York City. It is best to give the entire dose at one sitting and to seal the entire irradiated area with the emanation tubes (each of which contains about 1 mc) inserting from five to ten or more according to the size of the lesion. This gives an even, intense radiation throughout the tumor mass. In addition, crossfire from the surface by means of a radium plaque or the application of a number of tubes is sometimes used. The reaction occurs a little earlier following the use of buried bare tubes of emanation than following the surface application of radium. It begins as a rule in about seven days, is usually at its height in from two to three weeks, and then gradually diminishes. This reaction consists of an increase in the swelling with burning pain and often an increase in the size of the lesion due to ulceration following the separation of the slough. A reaction on portions of the mouth adjacent to the area treated is constant and often painful and unpleasant feature. In favorable cases, after the height of the reaction has been reached, the lesion softens rapidly and then heals slowly.

Probably the method next best to the burying of bare tubes of emanation is the insertion into the tumor mass of steel needles containing radium element. The number of these and the time of exposure depend on the strength of the needles and the size of the lesion. This method probably causes more tissue destruction than the bare tube method and does not give such an intense local radiation. The surface application of tubes or plaques alone is certainly the least satisfactory form of treatment and can be expected to give no more than palliative results except in the most superficial cases.

At the same time that the tongue lesion is treated the cervical glands should be given a massive dose of roentgen ray covering three areas, the front and the two sides. If there are palpable glands that

are clinically malignant, these should be removed about 10 weeks after radiation if they are operable. If they do not appear to be operable, bare tubes may be buried in them at the time of a partial operation or inserted through the skin under local anesthesia. If no glands are palpable, the patient should receive 1 or three courses of roentgen ray treatment and be kept under close observation as long as possible. If glands develop under treatment, they should be operated on 1 once and the roentgen ray treatment continued after operation. During operation, bare tubes may be buried in any suspicious area. The technique of the roentgen ray treatment has been constantly changed. During the last year the distance and the screening have been considerably increased, with apparently better results. The application of a radium pack to the neck in these cases has been given up as uneconomical and no more effective than the roentgen ray.

During the last two and half years fourteen patients with carcinoma of the tongue have been treated by the author. Four were clinically free of the disease 10 of them 1 year, one, one and half years and one six months after treatment. Five showed cervical metastases at the time treatment was instituted, and 6 of the others developed an involvement of the glands during treatment. None of these patients survived. It is reasonable to expect that with improved technique it will be possible to cure 5 per cent of unselected cases of carcinoma of the tongue by radiation.

ANDREW HARTMAN, M.D.

Freer, O. T. Carcinoma of the Larynx Treated Locally with Radium Emanations. A Clinical Report. *J. in M. A.* 9, 1932, 607.

By means of an apparatus which he described in detail the author has been able to apply radium treatment to a number of cases of carcinoma of the larynx most satisfactorily. After the induction of local anesthesia of the oropharynx, the base of the tongue and the larynx, the specially devised holder containing four radium emanation tubes is placed as close to the growth as possible. The dose found best in the average case is from 300 to 500 mc for one hour repeated every three to seven days until from 600 to 750 mc has been used. The reaction is usually moderate and the cancer disappears rapidly. Early and soft mediastinal carcinomas may disappear after only one treatment of 50 mc for one hour. Irradiation up to the full dose should be given, however even though it causes sharp reaction.

Thirty two cancers of the larynx were treated by intralaryngeal irradiation. Three of the patients were moribund when admitted and soon died. In twenty-two others the cancer was in an advanced stage. In only seven was it in an early stage. Four of the cancers were very resistant to irradiation. Ten of these, early hopeful progress was followed by no further response to the ray. A third there was an excessively prolonged reaction which had not

ceased when the patient died of pneumonia. In the fourth case, the cancer progressed after temporary improvement and then could be checked only temporarily.

In eleven patients, speedy complete disappearance of the cancer and its symptoms was followed by return of the growth, the average time between the last irradiation and the return being four and one-half months. In seven of these patients the advanced state of the cancers favored a relapse, all being large tumors deeply invading the tissues. In four of these cases of recurrence the cancer was again removed by renewed irradiation and there was no further relapse. The fifth was being successfully treated when the patient died of heart failure. These four cases, with ten in which the cancer disappeared without return after the first irradiation, make a total of fourteen in which the cancer was completely eliminated and the patient became clinically well. Deducting the three cases of moribund patients leaves fourteen of twenty-nine, or about 50 per cent, in which there was clinical recovery. This is a good percentage considering that in twenty-five of the thirty-two patients the cancer was in an advanced stage and thirteen of the patients had extrinsic cancers, that is, cancers which were inoperable by laryngectomy.

The author's experience has led him to the conclusion that external irradiation is much too feeble to be efficacious. By virtue of its select action, radium emanation applied of sufficient strength within the larynx offers far greater chance of cure. The amount of reaction after irradiation varies, but only in the exceptional case is it very intense and prolonged. Renewed symptoms after apparent cure invariably mean recurrence. Recurrences usually react to re-irradiation in much the same manner as the cancer reacted to the primary irradiation.

The prognosis is best in cases of early superficial cancers on the cords or in the arytenoid region which do not impair cord motion. It is less favorable when the cord is fixed and when deep edema of the arytenoid and ventricular band region reveals entrance of the cancer into the laryngeal muscles or perichondrium.

Sarcomas cancer with retracting distortion of the interior of the larynx but no edema and with little viable neoplasm was found favorable for irradiation, as were also soft cancers of rapid growth with little penetration, and large tumor formation. Squamous cell carcinomata with whitish, fuzzy surface may be resistant, especially when they cause pain and deep swelling. A favorable symptom is intense, prolonged reaction with edema and false membrane formation. This shows either weak resistance of the tissues to radium or multiple deep cancer foci. Early glandular carcinomata usually yields readily to external irradiation from a distance with from 500 to 1,000 mc for seventeen hours, as employed by Sampson and Fletcher. The outlook is unfavorable when all of one side of the neck including the inferior triangles, is filled with gland cancers and when

paralysis of the recurrent laryngeal and hypoglossal nerves is revealed by deep invasion of the neck.

The treatment of cancer of the larynx by irradiation by the method advocated contrasts very favorably with operation. By its selective destruction it causes the cancer to vanish leaving the normal tissues intact. It often restores speech and the normal structure of the larynx. The penetration of the rays clears away not only the cancer but also the hidden cancer foci in its surroundings which the knife cannot reach. It offers the patient about a 50 per cent chance of being freed of the cancer either once or by the irradiation of recurrences. Therefore emanation should be the first and laryngectomy the last resort.

ADOLPH HARTUNG, M D

Barringer B S Technique and Statistics in the Treatment of Carcinoma of the Bladder by Radium. *Am J Roentgenol* 9 14, 757

In the treatment of carcinoma of the bladder by radium the application is made intravesically to growths confined to and around the bladder neck, small papillomata, pedunculated papillary carcinoma (if the pedicle can be reached) and infiltrating sessile growths not more than 3 cm diameter. Growths other than these are treated by the suprapubic method. This group includes extensive infiltration of the bladder wall, large and multiple tumors, and doubtful cases.

The technique employed in the intracavitary method is as follows:

By means of a flexible spring holder used through the sheath of the Brown-Burger operative cystoscope, one or more of screened radium are held against the tumor for half an hour while the tumor is being observed through the cystoscope. This is repeated every two weeks or less often if the tumor is disappearing satisfactorily. If the neoplasm appears solid or hard or has an indurated base it may be treated by thrusting into its base or the indurated part a radium needle screened simply by the steel of the needle. If the tumor is more extensive if it is papillary in character if the pathologic examination shows it to be a pure papilloma, and especially if it is around the bladder neck, the treatment is often begun by placing in the bladder tubes of screened radium (5 mm sil or 3 mm rubber). These tubes are inserted through the sheath of a straight cystoscope, tied with string, left in place for varying periods of hours, and then pulled out of the urethra by the attached string. As a rule the thorax uses tubes of 50 mc for five or six hours. The value of such radiation is, first to determine how the tumor reacts to radium, second, to stop the bleeding temporarily so that cystoscopy will be possible, third, to destroy that portion of the tumor around the internal urethral orifice.

The suprapubic application of radium in external carcinoma is made under gas and oxygen anesthesia. The bladder is exposed and opened. Sponging of the exposed tumor is restricted; the minimum in order

to prevent bleeding and the spreading of tumor cells. Protruding portions of the tumor are snared off with a simple wire snare. If the tumor is flat and not papillary in type, none of it is removed. The papillary part is snared off to facilitate exposure and treatment of the base. The indurated parts of the tumor are bare radium tubes (7 mc) is implanted by means of a needle in each square centimeter. These bare tubes are put in to the extreme edge of the tumor. The bladder is filled with 60 per cent alcohol.

(After the method of Beer (three minutes) order to kill any stray tumor cells and to prevent implantation. It is then closed with plain catgut and usually is drained with a small rubber tube.

To determine the value of radium removal of bladder carcinoma comparison is made between the results obtained with radium and those given by operative treatment. Three groups of cases are considered, viz. operable cases, inoperable cases, and those in which operation is performed as an adjunct to radium treatment. In the inoperable group are placed:

Multiple carcinomata or large carcinomata with a base more than 4 cm. in diameter.

Carcinomata which have affected the trigone and posterior urethra.

3. Carcinomata which have been operated upon previously and have recurred.

4. Carcinomata in persons whose age or condition contra-indicates operative removal.

Ten operable and twenty inoperable cases treated with radium are cited in detail as regards the gross and microscopic pathology, the complications, the method of applying the radium, and the results. In eight of ten operative cases (80 per cent) the carcinoma was removed from the bladder. The two patients who died lived 1 year and three months respectively after they were first seen. In twenty inoperable cases of bladder carcinoma the tumor

was removed from the bladder. In three cases the carcinoma recurred after removal. In one of these three the recurrence was beyond the bladder; the other two are being treated. One patient died from radium sloughing of the bladder.

Brief consideration is given to tumors in the third group. Thirty-five bladder carcinomata were treated in this way. In only two of these cases might the tumor have been regarded as operable. In two cases it was so large that the bladder was not opened, but radium was implanted in it. In twelve of these thirty-five cases the carcinoma had been removed from the bladder. Nineteen of these thirty-five patients are living. In cases which could not be benefited, it is probable that death was not appreciably hastened. On the contrary in some hopeless cases the tumor's growth was retarded, the spasm of life lengthened, and bleeding stopped.

Scholl of the M. J. Clinic reported that of ninety-four patients operated upon for solid carcinoma of the bladder sixty-seven (71 per cent) are dead after an average duration of life of seven and half months, and twenty-seven (28.7 per cent) have lived

an average of three years and three months. Twenty per cent of patients operated on for infiltrating carcinoma died during the first month after the operation, while radium removal had no immediate mortality.

The following conclusions are reached:

Radium removal is superior to surgical removal because it can cope with inoperable cases. If radium removal can be effected suprapubically the time of operation is shorter and the kidneys are less disturbed by the operation. Many so-called operable tumors can be removed through the urethra without operation.

ADOLPH HARTUNG, M.D.

BURNETT C. F. The Results of Treatment of Carcinoma of the Cervix, with Statistics and Technique. *Am J Roentgenol* 9, 2, 12, 1915.

Surgical removal in the very early stage of the condition has a low mortality and morbidity and results in permanent cure in a considerable number of cases. In moderate involvement of the parametrium and vaginal walls both the mortality and morbidity are increased and the percentage of cures is decreased. In cases of extensive parametrial or vaginal involvement the mortality is definitely increased, the morbidity greatly increased, and the cures are very few. In cases of fixed parametrial masses and/or extensive vaginal, bladder, rectal, or vaginal gland involvement there are practically no cures.

Local treatment with radium has no mortality or morbidity in the early cases and a very substantial percentage of permanent cures. In the extensive borderline operable cases the mortality and morbidity are low; the percentage of short clinical cures is very high, and the percentage of long clinical cures much less than in early cases, but much greater than that following operation. In cases of extensive parametrial fixation and those with involvement of contiguous parts of the bladder and rectum or all or nearly all of the vaginal wall immediate relief is given and may persist for months or years. Clinical cures are also very common, but persist for five years in only a small percentage of the cases.

Radiation from the surface of the body (the abdomen, the back, or the perineum) has been employed chiefly as a method supplementing other forms of treatment. In the presence of extensive gland metastases this method sometimes resulted in marked relief from pain as well as some shrinkage of the masses but nothing approaching a cure was ever observed. None of the claims made regarding the results obtainable by the Erlangen method of treatment with highly penetrating roentgen rays could be substantiated. Obtainable statistics of cures especially in fairly early cases, so that the relative value of this method and radium therapy could be determined.

Of 13 cases observed by the author with Kelly and reported in a previous communication only fourteen were operable. Ten of the latter were treated by a combination of radium and operation, and four by radium alone. At the time this article

as written, more than seven years after the treatment, five of those treated with operation and radium and two of those treated with radium alone are still alive.

With regard to the technique the author states that emanation has been employed for a number of years instead of radium element. Applicators are ordered and arranged to fit the requirement of the particular case. When the cancer is limited to the cervix one tube is placed at the internal os, one at the external os and four on the cervix. In such cases total of 3,000 mc-hrs of radiation (200 mc-hrs within the cervix and 800 mc-hrs upon it) is curative single dose. When the parametrium is involved the exposure should be increased 4 or 4.5 gm hrs. For extensions on the vaginal wall about 24 gm hrs of irradiation evenly distributed should be given for each square 5 cm of surface in addition to the cervical treatment indicated. Deep parametrial or paravaginal nodules should be treated by the implantation of emanation points. In cases of high abdominal masses this implantation should be effected through an abdominal incision. When the needles are used the treatment is given

under gas anesthesia. When needles are not used the patient is treated in the knee chest posture without the induction of anesthesia.

After the treatment examinations are made at intervals of two weeks and no further treatment is given for at least ten weeks unless there is obvious trouble outside of the areas treated. Retreatment in the heavily radiated areas if necessary must be much lighter. As a preliminary to operation, about two thirds of the dosage mentioned is given.

The primary results of the treatment discussed was very good. A primary clinical cure was obtained almost invariably except in the advanced inoperable cases.

The following conclusions are reached:

The treatment of choice in early operable cases is operative with pre- and postoperative radiation. In late operable cases it is topical radium treatment and perhaps external radiation. In advanced cases topical radium treatment and the implantation of bare points are indicated. The use of radium alone in early operable cases is thoroughly justifiable. Operation alone is also justifiable.

ADOLPH HARRUNG, M.D.

GYNECOLOGY

UTERUS

Bretschneider: Observations on Myoma and Accident (Uterus Myoma und Unfall). *Zentralbl. f. Gynäk.* 1922, 217, 25

Sarcoma and carcinoma of the uterus has never been recognized as the results of accident because in such cases the essential conditions advanced by Talem in his *Handbook of Diseases Due to Accident* (viz. single and considerable effect of force at the site of the subsequent tumor and the formation of the tumor at a definite time determined on the basis of experience) are not fulfilled. In a lawsuit in which the author as requested to give an expert opinion he denied the relationship between myoma of the uterus and an accident, basing his statement on Ribbert's theory of the origin of tumors. If he believes that just as in cases of sarcoma and carcinoma of the uterus, so also in cases of myoma, an accident as a cause must be denied on principle.

On the other hand, number of cases—the author has observed such a case himself—have been unquestionably demonstrated in which an accident acted unfavorably upon a myoma already present, causing hemorrhage, necrosis, gangrene, peritonitis, or in erosion of the uterus. Therefore the question whether powerful forces injure a myoma and decrease the woman's earning capacity must be answered affirmatively but the question as to whether an existing myoma may undergo sarcomatous degeneration as the result of such trauma must be decided on the basis of the findings. *MISNER (2)*

Burney V. Remarks on the Scope and Technique of Myomectomy. *Lancet* 1922, 1, 108, 745

Myomectomy fulfills a higher surgical ideal than hysteromyomectomy in that it preserves the potentiality of reproduction. The very small fibroids as well as the large must be removed. Fibroids with broad bases placed posteriorly at or near the cervix often require difficult surgical procedures.

Malignant, necrotic, and suppurative degenerations are contra-indications to myomectomy.

Pedunculated and superficial tumors can be removed without disturbing an associated pregnancy, but in cases of deep fibroids the pregnancy must be interrupted at the time of operation.

A single anterior incision is best. Posteriorly placed fibroids are removed through the uterine cavity or through the wall unless they are pedunculated or superficial. Anterior incisions are more favorable because they are more accessible if post-operative bleeding or infection occurs and less liable to intestinal adhesions. Silk sutures are employed unless the uterine cavity is entered when the uterus is opened, catgut is used.

All redundant tissues is removed in order not to leave the organ too large. When the operation is finished if hemorrhage is troublesome all uterine arteries may be temporarily clamped during the operation. *R. E. CANNON, M.D.*

De Ott D. The Evaluation of Hysteromyomectomy (L'Evolution de l'hystéromyomectomie). *Grav. et acc.* 1922, 71, 200

In 1894 De Ott of Petrograd reported the results of twenty cases of supravaginal amputation of the fibromyomatous uterus with extraperitoneal fixation of the stump the mortality was 4.5 per cent. Schroeder later simplified the treatment of the stump. In 90 De Ott as obliged by the exigencies of case to perform a radical vaginal operation. This resulted satisfactorily. With the perfecting of the operative technique and asepsis series of ninety-nine cases were operated upon in this manner. There were no deaths. In a second series of 37 cases the mortality was only 0.27 per cent. When the abdominal route was used the mortality was 7.87 per cent and in total of 154 operations by both methods (high and low) performed during the period from 1895 to 1911 and a total of 834 operations performed up to 1911 the mortality was 3 per cent.

In Petrograd the mortality of abdominal operations for fibroids has fallen from more than 5 per cent in 1885 to about 7 per cent in 1920, and the mortality for operations by the vaginal route from about 5 per cent in 1895 to zero. 920. These figures show that the operation of hysteromyomectomy is now satisfactory. Success is due especially to the perfection of asepsis. *W. A. BRIDGES*

Frank, R. T. Cancer in the Cervical Gland Metastases in the Vermiform Appendix. *Surg. Gynec. & Obst.*, 1922, 34, 333, 334

The case reported was that of a woman 47 years old who had had supra vaginal hysterectomy for fibroids and five months later was treated with radium for carcinoma of the cervical stump.

One year after the hysterectomy the patient entered the hospital and shortly afterward developed symptoms of obstruction of the bowels. Surgical measures were employed but death occurred one hour after the operation.

Autopsy revealed cancer of the cervix which had not invaded the peritoneal cavity but involved the vesicovaginal septum and the parametrium. Numerous retroperitoneal lymph glands contained metastases.

In the tip of the non-adherent vermiform appendix was a small mass which proved to be identical in morphology with the original tumor.

Because of the danger of the development of cancer in the cervix following supravaginal hysterectomy some surgeons believe that a total hysterectomy should be done in all cases, but because of its higher mortality and the fact that it does not always prevent the recurrence of cancer the author regards it as routine use as unwise.

A search of the literature failed to reveal a case of metastatic carcinoma of the appendix in which continuity or contiguity were not responsible for the metastases. I. E. BROWNE, M.D.

ADENAL AND PERI-UTERINE CONDITIONS

Bell, W. B. Endometriosis and Endometriomyoma of the Ovary. *J. Obst. & Gynec. Brit. Emp.* 9: XLIX, 443.

The author reports on his investigation of the so-called chocolate cysts of the ovary and credits Sampson with the recognition of this very interesting pathologic and clinical condition.

From Bell's study of the subject it seems probable that all unstriated muscle fibers in relation to endometrial tissue in the ovary are merely those which are normal to the ovary but have undergone hyperplasia.

Bell reports a specimen removed by supravaginal panhysterectomy in which the uterus and tubes appeared normal but both ovaries showed endometrial tissue on section. Sections were made from the ovarian ligaments on either side at the junction of the ligament with the uterus but no trace of endometrial tissue was found. Consequently the conclusion is drawn that the lesions present were an independent ovarian endometrioma and an endometriomyoma respectively. Such cases are not uncommon and it is probable that before long many will be reported.

The article is illustrated with six figures showing the gross specimens and photomicrographs of the sections from the ovaries. C. H. DAVIS, M.D.

De Bruyne, F. The Clinical Results of Ovarian Grafting (Contribution à l'étude de la greffe ovarienne de l'ovaire). *Gynec. et Obstet.* 9, 2, 17, 36.

The author first discusses nine cases found in the literature in which an ovarian graft was extirpated and examined histologically.

Recently he has had a similar experience in the case of a woman of 35 years who had had a hysterectomy for adenial tumor. The graft was transplanted subcutaneously into the abdominal wall and extirpated one hundred and seventy-three days later. Histologic examination showed that it had given rise to a proliferation of luteal tissue which formed the wall of cysts too irregular in structure to be identified with normal corpus luteum or a true neoplasm. In the author's opinion the luteal cells have longer existence in the transplanted ovary than in the normal ovary. In the case reported the transplant had taken up the function of the ovary in part at least.

Earlier research demonstrated that the results of ovarian grafts are more transitory after subcutaneous transplantation than after transplantation into the abdomen or pelvis. The author's clinical experience confirms this finding.

De Bruyne has had sixty-eight cases of subtotal hysterectomy with bilateral salpingo-oophorectomy. In fifty-eight of these fragmental ovarian grafts were implanted subcutaneously on both sides. The majority of the grafts included parts of the corpus luteum, the cortical layer and the medullary zone.

Up to a certain point the subcutaneous transplantation of ovarian tissue, especially if the graft hypertrophies and becomes congested (which occurs in about 40 per cent of the cases) will prevent the disturbances of a premature menopause in 75 per cent of the hypertrophy cases.

A cystic formation results in 70 per cent of the cases in which the cortical layer of the ovary is grafted and in only 30 per cent of the cases in which the corpus luteum is grafted.

Cystic formations are more frequent when the ovary from which the transplanted fragment is taken shows normal histology.

In women more than 40 years old the grafts never become hypertrophied.

Although in the author's case he did not find any clear signs of follicular maturation, the clinical findings indicated that the transplanted follicles played the principal rôle in the phenomena observed.

W. A. BRIDMAN

Dorland, W. A. N. A Clinical and Embryological Report of an Extremely Early Tubal Pregnancy Together with a Study of Decidual Reaction, Intra-Uterine and Ectopic. *Am. J. Obst. & Gynec.* 9, 37.

The subject of ectopic decidual reaction is of too recent development and the clinical material is still too scanty to warrant any very definite conclusions. Outerbridge covered the matter satisfactorily when he stated that ectopic decidual appears, on the whole, to be extremely infrequent in occurrence, circumstances which may be ascribed to variations in the intensity of action of the ovarian hormone, different degrees of responsiveness on the part of the subperitoneal connective tissue cells or the presence or absence of suitable local stimuli.

According to Tamsug, the superficial location of the ectopic patches seems to indicate that the end products of the normal decidual reaction do not reach these points through the blood or lymph channels, but pass directly through the lumina of the tubes and out through the fimbriated extremities, causing decidual reaction in the ovarian and pelvic peritoneum through irritation. This theory could seem to offer a satisfactory explanation of the comparatively great frequency of the patches in the peritoneum of the Douglas's cul-de-sac, the posterior surface of the uterus, and the rectal walls areas toward which the irritating material would naturally drain.

E. L. COMSTOCK, M.D.

EXTERNAL GENITALIA

Smith, R. R. Prolapse of the Female Urethra and Eversion of the External Urethral Orifice. *Am. J. Obst. & Gynec.* 9 iv 395

Operations for the rebel of prolapse of the female urethra will vary somewhat according to the findings and whether or not there are other conditions to be dealt with at the same time. A simple eversion may be corrected best by removing the protruding mucosa and narrowing the meatus by triangular or more or less square denudation just below the orifice and including part of its circumference. This operation is apt to be bloody and considerable care is necessary to make the denudation of proper form and sufficient extent. In closing the wound the meatus should be narrowed to its normal proportions. Smith is placing the sutures deeper than formerly in order to insure approximation for longer period and prevent aspiration of the edges and granulation

wound. When considerable mucosa is removed and circular incision of the urethra is necessary, the stitches reuniting the mucosa to the edges of the orifice should be rather deep, catching up *fair amount of mucosa*, and should not be tied too tightly. The edges are apt to separate, if catheterization is long continued.

Prolapse of the vaginal wall and urethra is corrected best by removing the redundant mucosa by triangular incision with its base across the vagina and its apex toward the meatus. The denudation should include all of the redundant mucosa or more. By bringing the edges together the operator may judge the amount which must be removed. The incision is closed with deep sutures which catch up first the edges of the incision, avoiding the urethra, and draw the urethra and external orifice back up under the labes *where it belongs*. *On the whole the results are good*, but in some cases there may be partial recurrence of the prolapse. E. L. CORDELL, M.D.

OBSTETRICS

PREGNANCY AND ITS COMPLICATIONS

Handerson, L. Ileus During Pregnancy (Ileus der Schwangerschaft) *Zentralbl f Gynaek* 9 xl 1, 1957

Intestinal obstruction is a dangerous, but fortunately a rather infrequent complication of pregnancy and the puerperium. Usually the cause is a condition such as invagination or volvulus. Instances in which the pregnant, non incarcerated uterus alone is the cause are very rare.

Handerson reports the case of a 34 year-old para in the ninth month of pregnancy who had had constipation for twenty years which became more pronounced during each pregnancy. Three days before admission to the hospital she suffered an attack of severe abdominal pain, vomiting, and cruetation followed by complete retention of faeces and urine. At the time of admission the abdomen was markedly distended and distinct peristaltic movements were visible below the umbilicus. Dullness was present over a breadth about the symphysis. The uterus itself was not palpable and the bowel sounds were inaudible. Enemas were unsuccessful.

Operation revealed marked distension of the small and large intestines. The obstruction was caused by the pregnant uterus which clamped off the colon between the flexure and rectum. A cesarean section, done and non viable child delivered which died after ten minutes. The patient recovered.

The author agrees with Fleischhauer who, in all cases of pressure of the pregnant uterus presupposes a disturbance of motility of the intestine. In Handerson's case the existing intestinal atony was markedly increased by a dietetic error which rendered the distended, weakened gut unable longer to overcome the pressure of the uterus.

If enemas are not successful the abdomen should be opened. Vaginal cesarean section should not be attempted before this is done as otherwise the incarcerated coils of intestine may be injured. After the abdomen has been opened the uterus should be emptied only if it is found to be the immediate cause of the obstruction or closure of the abdominal wall without emptying of the uterus would be difficult. An operation need be given to the uterus if a preterm birth will follow the operation.

In a case of intestinal obstruction occurring during the ninth month of pregnancy which operated upon by Linderken, the obstruction was found to be the sigmoid flexure. The flexure was twisted to an angle of 90 degrees and wound around the uterus about the level of the internal os. Linderken uncoiled the

intestine, resected the long injured coil, and sutured the ends of the gut into the abdominal wound. Death occurred after a few hours. In the development of the volvulus, the length of the flexure and the lesions of the mesosigmoid were contributory factors in addition to the pregnancy.

WOMEN (2)

Solomons, B. The Results of the Treatment of Eclampsia by the Dublin Method *J Obst & Gynec Brit Emp* 9 xlv, 46

Special points in the treatment are:

1. Starvation. In some cases nothing but water is given for several days. If then there is no improvement, cesarean section is performed.

2. Gastric lavage. This is continued until the ter returns clear. Two ounces of magnesium sulphate solution are then left in the stomach.

3. Bowel lavage. This is given with the patient on her left side and with the tube inserted 8 in into the bowel. Sodium bicarbonate is then put in until the bowels are clear and then part of the solution is left in the bowel.

4. Morphine. Recently this has been omitted.

5. The rectum of sodium bicarbonate under the breasts.

6. Close observation to prevent drowning or other accidents.

Of the women whose cases are reviewed, 67.3 per cent were primigravidae. When both the mother and child recovered the average number of convulsions was 5.03. When the mother alone recovered it was 9.45 when the child alone recovered it was 0.50 and when neither recovered it was 0.20. The more frequent the convulsions the greater the prognosis.

The incidence of the condition was greatest in July, February, March and September. The average mortality was 30 per cent.

R. L. CRAMPTON, M.D.

LABOR AND ITS COMPLICATIONS

Pickett A. N. Immediate Repair of Lacerations Versus Delay *Acad Med J* 9 xl, 590

The author believes that repair of lacerations due to labor within thirty-six hours after delivery is better than intermediate repair five to ten days later or late repair months or years later. Against the intermediate method of Hurst are the ill effects of the nervous strain experienced by the patient when it is necessary for her to submit to another operation so soon, the temporary interference with nursing when the baby requires it most, and the loss of time to the mother, the attendants and the hospital.

R. L. CRAMPTON, M.D.

Davis, E. P. The Uterus After Cesarean Section.
Am J Obst & Gynec 9 1 335

An important problem associated with cesarean section is whether the operation should be terminated by sterilization or whether the patient has a fair prospect, if her pelvis is sufficiently large of being successful in spontaneous labor in subsequent pregnancies. In addition to this problem, birth control presents itself in another phase. The obstetrician is often called upon to treat multiparae who are near the final limit of normal child bearing. Many of them are women in straightened circumstances who have as many children as they can properly rear. Many have reached the stage of physical decline after a high pregnancy becomes progressively more dangerous. Under these conditions sterilization following cesarean delivery might be justifiable. The condition of the uterus in such cases is an important factor in deciding these questions. When sterilization is not effected and the patient elects possible future pregnancy the method of suturing the uterus is of paramount importance.

An opportunity to examine the classical cesarean section scar in the uterus was afforded the author by several cases in which hysterectomy was performed after second delivery. All of these women were operated upon by the same method, viz. turning out of the uterus from the abdominal cavity in caisson through the expulsive segment, emptying of the uterus and, in suspected cases, packing of the cavity. The terne muscle as closed with buried silk sutures, and the peritoneal covering of the uterus with catgut. In none of these cases had septic infection developed after the first operation. In those which were allowed to remain in the hospital sufficiently long, a fair degree of convalescence had been obtained. The patients were white women of the laboring class who cared for their children and did their own housework.

In one case the terne muscle ruptured but the scar remained firm and was stronger than the uterine muscle. In the second case the uterus had undergone such fatty degeneration that extensive rupture occurred as soon as labor began. This patient was not given an opportunity to recover from her previous section and was denied the benefit of hospital care during the last month of her pregnancy.

All of these multiparae showed the degenerative processes which inevitably occur in multiparae: viz. old proper cure during pregnancy and labor, namely fibrous uteri and atrophy of the muscular tissues. In a patient who was toxic at the time of the operation fibrosis and atrophy were present and in addition there was occlusion of the blood vessels by emboli and thrombi and marked round cell infiltration at the junction of the placenta and uterus. Multiple embolism in the case of a toxic patient is an unusual but natural illustration of the pathology of toxemia.

The author believes that this class of cases strengthens the arguments for birth control by elective hysterectomy at term. These women had

borne children with difficulty and had done their utmost to rear these children at the expense of their own health. Under such circumstances Davis believes elective hysterectomy is justifiable and that no more practical application of birth control could be suggested.

E. L. CORVILL, M.D.

PURPERIUM AND ITS COMPLICATIONS

Lynch, F. W. Retropositions of the Uterus Following Delivery. *Am J Obst & Gynec* 1922, IV 36

Twelve hundred and thirty women who were delivered at term in hospital wards were examined thereafter at intervals for a minimum of four months and maximum of twelve months. There were no known pelvic inflammations in the series of cases. During the period of this investigation 357 women were delivered at term. This study is therefore based on 60.3 per cent of the total number of women delivered at term. The following conclusions are presented.

Retropositions were noted in 4 per cent of 30 women kept under observation for four to twelve months after delivery.

Thirty-two per cent of the 305 women with retroposition came back because of pelvic symptoms. Ten and a half per cent of 75 controls with upright uteri complained of slight symptoms.

Nineteen and six tenths per cent of 116 private patients presented uterine retroposition in contrast to 44.8 per cent of 1,044 clinic patients. Therefore hard work may be an important etiological factor of retroposition.

Replacement of the uterus and pository support gave anatomical correction in 73 per cent of the cases. Symptomatic cure and anatomical correction were obtained by identical procedures in 68 per cent of the 66 cases with symptoms.

Subsequent pregnancies occurred in 5 per cent of the women but did not have displacements, in 1 per cent of the women who had been treated for retroposition, and in 5 per cent of the women whose retroposition had not been corrected.

A new type of suspension has been found entirely successful. Following 35 operations there were no recurrences. Such made necessary a new round ligament fixation upon the uterine fundus (as Webster thirty-one Coffey sixteen typical). There were four recurrences following twenty-eight Kelly. Need suspensions with shortening of the upper part of the uterosacral ligaments.

The importance of early correction of retroposition following labor is clearly evident.

E. L. CORVILL, M.D.

NEWBORN

Muenro, D. and Earle, R. E. The Diagnosis and Treatment of Intracranial Hemorrhage in the Newborn. A Report of Fourteen Treated Cases. *Am J Dis Child* 1922, 22 73

The authors give a comprehensive review of the literature on hemorrhage in the newborn and report

fourteen cases they have treated. From their study they come to the following conclusions:

Cases of intracranial hemorrhage in the newborn may be classified etiologically into three groups: (1) the traumatic group, (2) the asphyxia group, (3) the fetal disease group.

The diagnosis of intracranial hemorrhage in the newborn should be based on: (1) the history and physical examination, (2) the measurement of intracranial pressure by spinal manometer, (3) the coagulation and bleeding times.

3. The treatment of intracranial hemorrhage in the newborn depends on: (1) the successful biological classification of the case, (2) the recognition of the intracranial pressure.

4. The treatment of intracranial hemorrhage due to hemorrhagic disease consists of the administration of normal whole blood subcutaneously until the bleeding and coagulation times have returned to normal, followed by measures for relieving the intracranial hypertension.

5. The treatment of traumatic cases consists of the prompt elevation of depressed fractures and the relief of intracranial hypertension by drainage, by lumbar or ventricular puncture as indicated, or typical subtemporal decompression.

6. The treatment of asphyxia cases consists of relieving the intracranial hypertension by lum-

bar or ventricular puncture as indicated, or by the performance of a typical subtemporal decompression.

7. Cerebral localization of pathology in the newborn is rarely possible. Therefore corrective surgical measures are impossible.

8. The pathology, diagnosis and treatment of Little's disease should be studied more extensively from the point of view of intracranial pressure.

C. H. DAVIS, M.D.

MISCELLANEOUS

Stimson, C. M. The Influence of the Placenta on the Mammary Gland. *Am J Obs & Gynec*, 9, 2, vi, 43.

It would appear that during pregnancy there is something in the maternal blood which inhibits lactation, and that lactation occurs only when this substance is eliminated. In the case cited lactation did not occur during the presence of attached placental tissue within the uterine cavity and in certain cases of abortion milk does not appear in the breasts while placental tissue remains attached in the uterus. These facts therefore suggest that the placenta is the inhibitor of the mammary gland, holding it in check until its function is necessary.

F. L. CORVELL, M.D.

GENITO-URINARY SURGERY

ADRENAL, KIDNEY AND URETER

Rovinsky T. The Surgical Treatment of Nephritis and Aseptic Nephroses (Sur le traitement chirurgical des néphrites et néphroses aseptiques). *Arch. Chir. Surg. Scand.* 9: 1-56.

In 1901 Rovinsky reported five cases of nephritis treated by decapsulation of the kidney or as he termed it nephrolysis. The operation as indicated by pain or hematuria. In Rovinsky's opinion the effect of the nephrolysis is due principally to relaxation of the strangulated kidney. He believes the operation is indicated chiefly in cases in which perinephritic processes cause pain and hemorrhage and obstruct the renal circulation. In 1902 it had not occurred to Rovinsky that decapsulation might cure severe nephritis without distention of the capsule and he expressed scepticism when Edebohl proposed it for all types of chronic medical nephritis. Rovinsky now believes it is indicated whenever medical treatment has no appreciable results. He has performed it in seventy-seven cases (thirty-seven of men and forty of women). A lumbar incision is made, the capsule is split along the convex border and each half is turned back toward the hilum. The capsule is extirpated only if it is markedly abnormal. The cases treated are classified into four groups.

Group 1. Interstitial nephritis or perinephritis with crises of pain and hematuria but without albuminuria between the crises. Thirty-six cases of this type were cured by nephrolysis. In Rovinsky's opinion these are cases of toxic or valvular toxic effects on the kidneys.

Group 2. Interstitial nephritis associated with albuminuria, pain and hematuria, and often nodular. There are thirty-two cases of this type; eleven of them with advanced renal trophy. Two of the patients died shortly after the operation; one died after temporary improvement; nine were greatly benefited, and nineteen appeared to be entirely cured. Good results are obtained even in some of the cases with advanced renal trophy, although the deaths and poorest results were also in this group.

Group 3. Diffuse parenchymatous nephritis (chronic nephroses). In this group there were eight cases. Nephrolysis resulted in cure in four cases and temporary improvement in five. In the others it had no effect. In the latter the renal affection was unilateral in one nephrectomy as done later and was followed by complete recovery.

Group 4. Glomerulonephritis. In two of the three cases of this type the condition was unilateral. These two cases were cured by nephrolysis but in the third the operation had no effect.

W. A. BRYAN

Dermall, W. E. Malignant Papilloma of the Kidney. *Surg. Gynec. & Obst.* 92: 475-483.

The case reported in this article is the fifth seventh recorded in the literature. Twice as many males are affected as females and the condition may occur at any age. The etiology is unknown, but inflammation and stone have been held responsible. The tumor may be small, isolated bud-like growth or single large cauliflower mass filling the renal pelvis and destroying the renal parenchyma. It shows marked tendency to involve the lower urinary tract secondarily.

The symptoms vary according to the size of the growth. Hematuria is the most common sign. This arises in intensity and usually is intermittent. Pain is more or less constant and radiates down the loin. The symptoms may persist for years. It is possible that some of the cases diagnosed as essential hematuria may be of this type. The condition should be suspected in the presence of a plain roentgenogram, calc along the ureter diminished or absent function of the suspected kidney and a palpable mass in the loin. If in addition, cystoscopy reveals a papilloma at the ureteral orifice, if the pyelogram reveals filling defect in the renal pelvis and if the urine contains unidentified epithelial cells, the diagnosis is practically certain.

The treatment in all cases is extirpation of the affected kidney with as much of the ureter as possible. When there is bladder involvement subsequent amputation is indicated. L. KROWE, M.D.

BLADDER, URETHRA, AND PENIS

Figueroa, A. M. The Pathology and Treatment of Fibromyosarcoma of the Urinary Bladder (*Patología y Tratamiento del Fibromyosarcoma de la Vejiga*). *Arch. Chir. Surg. Scand.* 9: 31-41.

This detailed study is based on the following case which was diagnosed clinically by gynecological and treated surgically by Fedoroff who performed a transperitoneal operation. Seven years previously the patient, a woman of 30 years, had had hematuria for several weeks. Since that time she had been well until six months ago when another attack occurred. Micturition was painful and frequent and emptying of the bladder was impossible unless the patient stood partially upright with the body bent slightly backward. The tumor could be demarcated from firm, slightly movable tumor the size of lemon, which presented small nodules on its surface. The growth thinned the anterior wall of the sigmoid and caused it to project forward.

Cystoscopic examination showed that the normal mucous membrane was pushed forward; the right posterior quadrant by tumor the size of walnut.

The right ureteral opening was higher than normal and gaped open but contracted at the escape of urine. The capacity of the bladder was 370 cc.

At operation it was found that the neoplasm involved almost half of the bladder. Where the tumor projected into the lumen the vesical wall was resected. The rest of the growth was removed by morcellation with the exception of the tumor nodule enclosing the ureter. A drainage tube was then inserted and the bladder sutured around it.

After the operation the patient was kept in the abdominal position for two weeks. A self-retaining catheter was then inserted and the patient changed to the dorsal position. The abdominal fistula was closed at the end of four days. When discharged from the hospital the patient was free from symptoms and the capacity of the bladder 230 cc. Cystoscopic examination two months later showed a linear scar which was stellate below and extended upward into diverticulum. The right ureteral opening was widened and round, but active contractions could be observed. The left orifice was widened and drawn toward the right as far as the midline.

Histologic examination showed the tumor to be an interstitial fibromyoma of diffuse growth which had undergone mucoid degeneration at the center and was without an endothelial lining.

The author has found forty-two myomatous tumors of the bladder described in the literature since 1871; only three were interstitial fibromyomata. Kossel's case is noteworthy in that the fibromyoma grew on the periphery and attained a size equal to that of the uterus at the end of pregnancy and a weight of 94 gm.

W. H. OWEN, SACRAMENTO, CALIF.

GENITAL ORGANS

Herbst, R. H. and Thompson, A. Carcinoma of the Prostate. *J. Am. Med. Ass.* 9: 1025, 1914.

The authors review the literature on prostatic cancer and their own experience with the condition. They found that at least one in every four tumors of the prostate is malignant and in one third of these cases there is evidence of bone metastases. A rather small number of the patients seek treatment sufficiently early to obtain permanent relief. Those whose cancer does not develop urinary symptoms until late. Early diagnosis is particularly urgent in cancer of the prostate because it is silent disease symptomatically until it is far advanced.

Pain along the sciatic nerve is the one symptom associated with early malignancy which should attract attention to the prostate in men of advanced age. Pain in the back and pain in the back are usually significant of extensive local invasion of bone but may be caused in some cases by glandular or bone metastases. The significance of increased resistance which is often found in the intermuscular space just above the prostatic gland must not be forgotten.

This infiltration produces an elevation of the trigone, termed the subtrigonal plateau when seen on cystoscopic examination. It can be felt more distinctly if a cystoscope is introduced into the bladder and the beak turned downward toward the trigone. Obliteration of the interlobular sulcus is also a characteristic rectal finding in malignancy.

From the standpoint of treatment cancer of the prostate is of three pathologic types:

1. A scirrhous type, which usually begins in the posterior lobe in the form of small, flat, or nodular areas. The process develops and spreads behind the urinary tract rather than into it. Therefore urinary symptoms do not develop until late.

2. A combination of Type 1 and benign hypertrophy of the upper portion of the prostate. This is difficult to differentiate from simple hypertrophy; the malignant area often being discovered only at operation.

3. A less common form of tumor in which the entire gland is involved by adenocarcinoma. These tumors are as a rule smooth and symmetrical but harder than the adenoma. Metastases do not occur as frequently as in Types 1 and 2.

The authors have obtained better results in cases of Types 2 and 3 than in those of Type 1 because the early development of urinary symptoms caused the patients to present themselves for treatment before metastases had developed.

Herbst and Thompson applied treatment through the opened bladder because it gave easy access to the tumor especially the subtrigonal area, and relieved urinary retention.

In addition to facilitating the introduction of radium, a suprapubic cystostomy protects the upper urinary tract and does much to make the patient comfortable during the weeks or months that treatment is carried on.

Some of the best results were obtained in cases in which it was possible to encase an adenomatous middle lobe fit to be of radium into the cavity and insert several needles containing radium in the malignant part of the remaining shell. Such radium treatment may be repeated if the bladder is kept open, or subsequent applications may be made by passing out the urethra a staff carrying in by introducing long needles through the perineum or both.

Most observers agree on the value of the roentgen ray in conjunction with radium therapy.

LOUIS CROW, M.D.

Cecil, A. B. A New Technique for Performing Perineal Prostatectomy. *J. Am. Med. Ass.* 9: 1025, 1914.

Cecil has been convinced for some time that if a young operation could be altered so as to rid it of technical difficulties, it would lend itself to more general use. He therefore turned his attention toward the development of a procedure which, while less difficult technically, would absolutely insure the integrity of the muscles of urinary control.

and at the same time would protect the rectum from injury.

The result as the devising of a tractor which can be easily introduced through the entire length of the urethra and, when opened in the bladder is efficient in bringing the prostate into the wound, thus preventing all possibility of injury to the external sphincter muscle and any unnecessary scar formation in the region of this muscle.

The uncertainty in dividing the recto-urethral muscle was met by changing the shaft of the handle of Young's bulb and spatula retractors so that while these are held firmly in position the operator is able to place a gloved finger in the rectum; the apex of the prostate and thus carry out the dissection under the sense of touch rather than by purely anatomical landmarks.

In Cecil's technique the patient is placed on the table in the exaggerated lithotomy position and the bladder partially filled with fluid to permit the easy opening of the tractor. The curved tractor is then passed into the bladder and the V-shaped incision made in the perineum. The limbs of the curved V-shaped incision extend quite far back and the incision is carried through the subcutaneous tissues rather boldly. The finger is then passed down into the fossa in front of the fibers of the levator ani muscle and the bulb retractor is introduced.

With a pair of thumb forceps the tumors are picked up just back of the bulb and the central tendon is divided straight downward. With the set-off bulb retractor then held firmly in place, gloved finger is introduced into the rectum, and by means of a specially devised, delicately curved clamp the entire bridge of tissue down to the apex of the prostate is grasped under the direction of the guiding finger in the rectum. The tumors are cut crosswise by the clamp with definite assurance that the rectum will

not be injured, and in this manner the fibers of the recto-urethral muscle are divided far back rather toward the rectal than toward the region of the external sphincter.

The handle and shaft of the tractor are then brought toward the operator, the bladder end thus being thrown freely into the bladder cavity so that the tractor may be easily opened, and by turning of the thumb screw the bladder end of the tractor is thrown at right angles to the shaft. Then by lifting on the tractor and pushing it away the apex of the prostate is brought quite far up into the wound. The fibers of the levator ani muscle are pushed aside and the rectum is stripped back along the fascia of Denonvillier.

Up to this point the urethra has not been opened. The oval lateral incisions of Young are made as these have been found preferable to the throwing back of a large bridge of tissue. Adenomatous masses are freed by a blunt dissector and removed through each lateral cavity by Young's technique. When the masses from the lateral cavities and any suburethral lobes encountered have been removed an incision 3 cm. in length is made through the right lateral cavity and the edges of the prostatic urethra are picked up with Allison forceps.

The tractor is then removed and in difficult cases it is sometimes found advisable to introduce the straight tractor through this opening. A finger is passed in through the prostatic urethra and the neck of the bladder palpated. If an intracaval lobe is encountered, it is removed through this opening. If the neck of the bladder is found contracted, it is divided. After the removal of all obstructing tissue, a single drainage tube is introduced through the lateral cavity at the bladder and packed about with cephalic gauze to control hemorrhage.

LEON GEORGE, M.D.

SURGERY OF THE EYE AND EAR

EYE

Wiedemann, H. Injuries of the Visual Tracts of the Brain (*Die Verletzungen der Sehbahnen des Gehirns*) *Zschr f ophthal Verwundgsw* 9 4, 437

More frequent than direct injuries of the optic nerve are indirect injuries due to fractures or fissures of bone. Usually other cranial nerves are also involved (the third, fourth, fifth, and sixth). In every case in which the lesion lies distal to the entrance of the central vessel into the optic nerve (10 to 20 mm behind the bulb) ophthalmoscopic signs are evident immediately. At the chiasm lesion of the cross fibers produces bitemporal hemianopsia whereas an injury behind (central) the crossing causes a so called homonymous hemianopsia.

A loss of both the left halves of the visual field occurs with injury of the tract of the primary visual centers, the optic radiation, and the right cuneus. As the papillary fibers branch off at the primary visual center, the papillary reaction is normal in cases of central lesion, but when the lesion is situated further forward there is a hemianopic reaction. As the visual sphere in the cuneus has a wider expanse its incomplete destruction does not cause hemianopsia but homonymous scotomata result.

With destruction of both the visual spheres, cortical blindness, viz blindness with an unchanged papillary reaction, occurs. Mental blindness, a condition in which the object is perceived but not recognized, is due to double injury of the convex side of the occipital lobe or its medullary layer and is an optic agnosia. Alexia is another type of the same condition. This is occasionally seen in association with conjugated paralyses of the eye muscles following destruction of the angular gyrus.

LEWIS (2)

Wilkinson, O. The Present-Day Status of Squint Surgery. A New Operative Technique. *J Am M Ass* 9 Jan 17

On the basis of seventy-five cases operated upon during the past two years Wilkinson draws the following conclusions:

It is necessary to operate on children sooner than has been our practice in order that they may favor binocular vision at an age when binocular vision may be acquired.

We are able to straighten any case of squint at any age without doing tenotomy or in any way cutting or interfering with the function of the internal rectus. A tenotomy of any grade is contra-indicated in squint in young children.

In cases of deviation of 4 degrees or less it is sufficient to advance the external rectus; the

squinting eye only. In cases of higher degrees of deviation it is advisable to advance the external rectus muscles of both eyes.

4. In young subjects with low degrees of deviation about 3 mm of shortening is required to each 5 degrees of deviation, or in case of squint of 5 degrees in a child under 10 years of age about 9 mm of shortening of the external rectus would be necessary to secure an accurate and permanent effect.

In case of from 20 to 25 degrees of deviation each 0.5 mm will correct 1 degree of deviation. In older subjects, 5 mm of shortening will approximately correct 1 degree of deviation. This holds good except in the very low degrees up to 10 or 14. The lower degrees require the ratio of 3 mm of shortening to 5 degrees of deviation. In a few cases the author has shortened the external rectus 5 degrees. He finds that the ratio decreases, for example, that 15 mm will correct from 30 to 35 degrees of deviation. However he advises against trying to advance a muscle to such an extent because it is more difficult, it may restrict the movements of the eye and it may cause some exophthalmos.

In cases with high degrees of deviation, say 40 degrees, 10 mm advancement of each external rectus is necessary. In cases of deviation of 50 degrees or more, the ratio increases 13 mm of advancement of each external rectus with the wearing of the brace ten days will correct as much as 30 to 35 degrees of deviation whereas 5 mm of advancement on one eye only will certainly not correct more than 5 degrees of deviation. It seems that when both eyes are operated on at the same time the ratio of correction is somewhat increased.

5. Over-correction is necessary to secure a permanent result. The eye should deviate about 8 to 10 degrees after the sutures are out and the brace has been removed. This is an advantage as it aids the fusion faculty to secure binocular vision as the previously crossed eyes are assuming its permanent position.

6. The use of the caliper or some definite measuring device is essential for accurate work. The method of suturing through the stump avoids the dangerous scleral stitch and secures a firm anchor age, while the placing of the suture in the well-dissected muscle makes possible more exact measurement of the amount of shortening produced. The importance of this is evident as it enables us to operate on children under ether anesthesia with the same confidence with which we operate on adults under local anesthesia, and to operate before fixed habits are formed before anatomical changes in the muscles and blindness of the squinting eye develop and before the possibility of fusion training is lost.

JAMES P. FITZGERALD, M.D.

Wood D. J. Intra-Ocular Cysticercosis. *Br J Ophth* 923 vi, 459

Wood has seen 21 cases of intra ocular cysticercosis, 16 of which he discusses in this paper. In one of the two cases discussed there was some doubt in the diagnosis. The other was that of a druggist who was also farmer and who came to Wood because of pain in the left eye of three weeks duration which had been much more severe for four days. On the lower outer part of the iris was a very definite cystic body, half in the center projecting into the pupil, and fixed to the iris by numerous fine threads like spider web or cotton wool. There was severe iritis. Atropin produced no effect, and after a few days it was evident that the cyst was larger. No movements could be detected but observation was difficult because of severe photophobia.

Under an anæsthetic Wood tried to remove the cyst with the bit of iris, but at the first touch of the forceps it ruptured into the anterior chamber. Fragments were removed but the threads were elastic and held the iris to hooklets were found in the debris. The threads appeared to be hyaline, with cells at intervals. There was immediate relief from the pain, but when the patient left the hospital the pupil was largely occluded by lymph.

THOMAS D. ALLAN, M.D.

Wood, D. J. Cysts of Long Duration. *Br J Ophth* 923 vi, 458

The patient, a woman aged 26 years, consulted Wood for the removal of a white mark from her left eye. On casual inspection this mark had the appearance of a round nebula with yellow opacity in its lower part. The patient stated that it had been present ever since she had measles twenty years previously.

Careful examination revealed a round cavity like double watch glass which contained some thick pus in its lower part and pressure became changed in shape. The cavity had a clearly defined circular margin and extended from the corneal margin to the inner third of the pupil. The eye was perfectly quiet, there had never been any pain, and the patient was sure that any change had occurred. The cavity extended back to Descemet's membrane. The fundus was visible through the clear part of the cornea, and vision was 6/36.

Wood inserted the cavity with a discission needle and removed the pus by irrigation. The eye then looked nearly normal. While the outline of the cavity remained clearly visible on careful inspection it was no longer conspicuous.

THOMAS D. ALLAN, M.D.

Henseler B. T. and Henseler F. H. The Early Development of the Corneal Tubercle. A Study in Slit-Lamp Microscopy. *Arch Ophth* 9 145

This paper reports a study of the development of experimental tuberculous of the cornea in rabbits. Three strains of bacilli were used in all of them vir-

ulent and one not virulent. For comparison the authors inoculated another group of rabbits with solution of staphylococcus aureus and in a third group injected mercuric sulphide.

The use of the slit lamp and microscope made it possible to observe much earlier changes than those recorded by other investigators. The first changes in rabbits injected with tubercle bacilli appeared from three to eleven days after the injection. No explanation can be offered for the delay of more than four days except that it must have been due to higher resistance of the animal.

The first change observed was a very faint injection of the conjunctival vessels at the limbus. In the white rabbits a pronounced acceleration of the circulation at the limbus was also noted at the same time. Not only were the vessels dilated but the blood flowed through them with much greater rapidity. In all the white rabbits inoculated with virulent strain of bacilli an injection of the small vessels of the iris preceded or accompanied the limbus hyperemia. In the eyes injected with mercuric sulphide there was injection of the vessels of the bulbar conjunctiva but no pronounced acceleration of the circulation at the limbus.

Cellular deposits on Descemet's membrane were easily seen when virulent culture was used. As a rule these deposits were found on the most dependent part of the cornea. Those noted on the less were quite irregularly distributed, but most numerous at the periphery. The greatest changes were found in the cases in which heavy emulsion was used for the injection.

The formation of vessels was perhaps the most characteristic of the lesions seen in tuberculous of the cornea. The earliest vessels were also observed at the limbus above, however the corneal injection was made. These vessels usually attained greater length than those coming in from below or the sides and eventually extended into the opacity at the site of injection. In the most advanced stages the entire cornea was sometimes vascularized. The earliest vascular shoots were seen two or three days after the first signs of reaction. They developed as short strands coming off of the superficial conjunctival vessels at the limbus and lay superficially on the cornea throughout their course. After two or three days of growth they met and formed capillary loops through which an exceedingly active circulation was maintained. As the vessels became larger they assumed brown like growth and increased in width as well as length. They grew much more rapidly when a virulent culture was used. When healing began, the circulation gradually became slower and the vessel decreased in size. In the authors experience the proximal loops never completely disappeared, though they have been grossly irritable. When such an eye was re-injected or otherwise irritated the blood flow through these capillaries was increased and they could again be seen in the unaided eye as fringe of newly formed vessels.

THOMAS D. ALLAN, M.D.

Charles, J. W. Neuropathic Keratitis the Result of Focal Infection. *Am J Ophth* 92 703

The author gives his reasons for considering dendritic keratitis a terminal nerve lesion and reports a case which resisted all of the usual methods of treatment but responded in two or three days to palliative treatment for suppurative ethmoiditis.

JAMES P. FITZGERALD, M.D.

Lent, E. J. and Lyon, M. B. Embryonic Fibrovascular Sheath of the Crystalline Lens. *Am J Ophth* 9 706

The authors review the literature, report an interesting case and discuss the differential diagnosis of embryonic fibrovascular sheath of the crystalline lens. This condition may be mistaken for glaucoma, but as glaucoma grows rapidly careful measurement over short period will determine the diagnosis.

Glaucoma is visible with the naked aperture if seen early but a fibrovascular sheath requires the use of plus 6 to plus 20 lens to bring out the very minute vessels connected with it.

JAMES P. FITZGERALD, M.D.

McCabe, F. J. Glaucoma Its Etiology and Treatment. *Rhode Island M J* 9 303

McCabe briefly reviews various theories regarding the cause of glaucoma and the results obtained by operative and non operative treatment. He recommends combining the two methods, considering each

case individually, studying the condition carefully and regulating the patient's habits and diet. For glaucoma simplex with little or no increase in tension and only slow change in the fields of vision he believes conservative treatment is best.

T. D. ALLEN, M.D.

EAR

Eitner, E. The Correction of Prominent Ears (Anlegen und Verkleinern hatching Ohrmuscheln). *Med Klin* 29 2211 7

Previously the operation the ear is brought to the desired position and the most extreme line of contact between its posterior surface and the skull is marked. If the ear is drawn sharply downward, the line of demarcation appears as an ellipse the long diameter of which is formed by the fold of reflection. The skin incision is then made through the transverse diameter and the skin and perichondrium are reflected up to the mark. The cartilage is divided in the same direction and a sickle shaped piece removed in a direction vertical to the incision downward and upward. If it is desired merely to fasten the ear down, the strip need be only a few millimeters wide, but if a reduction in the size of the ear is also desired, the strip must be correspondingly wider. After the suturing of the cartilage and the perichondrium the skin is excised to the line of demarcation and the ear fixed in the desired position by three or four sutures.

THOMAS (L)

SURGERY OF THE NOSE THROAT AND MOUTH

NOSE

Dean, W. A Case of Suppurative Ethmoiditis Complicated by Orbital Cellulitis and Acute Suppurative Dacryocystitis. *Archives of Otolaryngology* 1930

In the author's case there was a history of nasal catarrh for many years, obstruction of the nasal lacrimal duct for seven years, and purulent discharge from the nose for 1 month. Ten days before the patient seen by Dean, the discharge stopped and the eye became often shut. At the time of examination the pupils as intense the temperature degrees 1 and the face swollen. The eye protruded least in. Only the upper portion of the cornea could be seen and the sclera hazy. The conjunctiva prolapsed and necrotic. On irrigating the nose no pus could be obtained. The middle turbinate was polypoid.

Several incisions were made in the lid. The lacrimal and adjacent plate of the ethmoid were found to be necrotic. Pieces of polypoid degeneration the inferior ethmoid cells were curetted away. A large drain was inserted through the nose into this region and several drains through the skin of the lids. Pus continued to run from the operation wound for number of days. A large ulcer of the cornea healed gradually. The antrum which was found to be infected, was operated upon and treated. T. D. Allen, M.D.

MOUTH

McArthur, I. L. Atypical Operations on the Jaw and Mouth for Malignant Growths. *J. Am. Med. Assn.* 9 April, 1931

(Case 1) The patient was man 40 years of age with history of pyorrhea and consequent removal of the first and second molars followed by carcinoma of the unhealed gum and alveolar process with slow invasion both directions. Examination showed no invasion of the antrum or orbit. The nasal skin incision had been made the superior maxilla were divided from each other by an electric saw (1) at the base of the first left molar through the palatal foramen mesially (2) at the superior maxilla and maxillary junction and (3) at the nasal orbit along the entire length of the infra orbital margin. The inferior orbital plate and the superior maxilla were left intact. The function and appearance of the eye remained unchanged. Cervical glands were evident and none has yet been excised.

(Case 2) The case is that of man with recent small growth involving the gum, the alveolar process, and the jaw at the former site of 1 & 2 lower molars, and a definite palpable gland immediately

beneath the right tonsil. The macroscopic showed carcinoma. At operation the incision was made downward from the angle of the mouth to beneath the jaw curving back past the angle and the flap as detached from the jaw and retracted upward. The electric saw was used to excise a rectangular section of the ramus, including the alveolar process sufficient amount of dense osseous bone was left to form a bridge 5 cm in each diameter to maintain the external contour. The fragment removed measured 5 cm. Sixteen days later primary union had occurred and the incision was almost invisible. The involved gland was removed without tearing its capsule. The macroscopic showed it to be a typical carcinomatous gland. There was no recurrence or facial deformity four and one half years later. The patient died the result of fall.

(Case 3) The patient was man 44 years old who had a lesion surrounding the decayed root of the second right lower molar which failed to heal after the removal of both molars, curettage, and the use of caustics. This spot had been present for ten weeks but was not large. No glands were evident in the neck. The macroscopic showed carcinoma.

At operation the outer aspect of the lower jaw was exposed by incision beginning on the lower lip at the angle of the mouth curving down and along the natural fold of the cheek, and cutting all but the mucosa and below the jaw. The skin of the cheek was then drawn inward and the tissues were cut back and following the jaw down to the bone. Beginning at the angle of the mouth the mucosa was then sectioned so to contact as much of the normal membrane as possible. The incision was then made through the healthy soft parts and periosteum 1 to 2 cm radially from the growth 1 perpendicular as upper and a connecting long as sag were made at a distance from the free alveolar margin to avoid beginning infiltration and to leave a strong burnt bony ridge to prevent deformity.

(Case 4) This was the case of 45 year old girl with tumor of the mental prominence which deformed the chin into a round mass and loosened the incisors of the lower jaw. The pathologic report fragment as giant cell sarcoma. At operation the soft tissues were separated from the chin by an incision along the mouth the mental prominence as exposed through the buccal orifice and the lower lip was stretched beneath the bony chin. Incision revealed a thin layer of bone covering firm spheroidal tumor. The growth was not bony and yielded readily to sharp knife but not to the curette. The culture grew, such as the case of an English albat, was shelved out. The roots of the incisors protruding into the smoothly lined bony cavity were amputated. All suspicious areas were removed sufficient alveolar

process being left to form a bridge between the right and left maxilla. Two years later the alveolar bridge was fractured by the chewing of brittle food. After another two years a graft from the patient's tibia was implanted and adipose tissue was inserted beneath the skin to correct the deformity.

P. W. SWEET, M.D.

Bathbridge, W. S. Cancer of the Tongue. *Pitfalls in Diagnosis and Treatment. J. Am. M. Ass.* 9, 1933, 1480.

The following cases were selected from 700 recorded cases of tongue lesions.

Case 1. The patient was a man, 42 years of age, who was an excessive cigar smoker and in the habit of holding the cigar in the right side of his mouth. A small, recurrent sore developed on the tongue $\frac{3}{4}$ in from the right side and $\frac{1}{2}$ in from the tip. This sore had received mixed treatment with silver nitrate, the roentgen rays and other agents but had persisted for a number of years. Repeated Wassermann tests were negative. The mouth was in feeble condition, and there was involvement of the glands of the neck. The involved glands were removed, the lingual arteries were ligated, and a few weeks later the tongue was completely excised. Following the operation the patient gained in weight and strength and became able to attend to his business. One year later he died from recurrence in the neck.

Case 2. A man aged 49 years noticed in May 1902, a small, elevated spot half way back on the dorsum of the left half of the tongue. Following the local application of alum and the discontinuance of smoking this lesion disappeared but it reappeared when smoking was resumed. The patient came for consultation in December 1903, when he had lost considerable flesh and strength and was somewhat cachectic.

Examination revealed a hard, crater like ulcer involving the left anterior third of the tongue with the exception of the tip which was covered with a brownish, foetid fur. The reports of two pathologists confirmed the diagnosis of vascular epithelioma. Immediate operation was refused by the patient who insisted upon a trial of roentgen ray treatment. This latter proved futile despite nine weeks systematic application. In the meantime the growth extended to the right side of the tongue and induration of the floor of the mouth became evident. Several glands were palpable on both sides of the neck, and there was marked dysphagia. In March, 1904, the submandibular and sublingual glands on either side were removed with the salivary ducts and the lymphatic neck glands were removed en masse where this was possible. Ten cells later the tongue was completely excised and also a large part of the geniohyoid muscles, the hyoglossus muscles, the inferior third of the pillars of the fauces on the left side and part of the anterior pillars of the fauces on the right side. In seven hours the patient was able to swallow fluids. He was discharged a month later when he had gained 15 lbs.

He was then able to masticate solids, to taste, to talk intelligibly and even to sing. In May 1905 a small ulcerating lesion appeared in the anterior portion of the mouth. This was fulgurated. A few days after the operation the patient succumbed to pneumonia.

Cases 1 and 2 demonstrate that some cancers of the tongue are not recognized as such but are mistakenly diagnosed and treated as non-malignant neoplasms.

Case 3. This patient, a man aged 43 years, was operated upon in January 1907 for the removal of a small nodule on the tip of the tongue. A wedge-shaped section (2.5 cm long) of surrounding healthy tissue was also excised. The patient refused excision of the neck glands. The microscope showed suspicious cells only at the apex of the removed section and none in the nodule. The following day another small section was removed at the apex of the incision in the tongue. There was no recurrence of the epithelioma. The patient disappeared during the recent war.

Case 4. The patient was a man aged 60 years who, in December 1905 discovered a small, wart-like spot on his tongue. A diagnosis of cancer was made and radium applied once in January and again in March, 1906. As the spot continued to increase in size, excision of the tongue was advised. Examination showed the tongue to be spotted with leukoplakia. The center was a typical epithelioma within an ulcerating mass the size of five-cent piece. The surface of the tongue suggested syphilis. The Wassermann reaction was 4 plus. After five weeks of antisyphilitic treatment the inflammation abated, leaving an ulcer the size of a split pea. The cancerous and sclerotic part of the tongue was removed by conservative operation. The pathologic report was epithelioma. The patient recovered but in January 1907 died of acute pneumonia.

Cases 3 and 4 demonstrate that errors are made in diagnosing the type, stage, and extent of tongue cancer.

Case 5. The patient was a woman 28 years of age with a history of appendectomy performed in September, 1909 and followed the next day by a sore little to the left of the median line on the lower lip. This lesion was diagnosed as a fever or other sore, and treated with ointments. It increased in size, and laboratory examination six weeks later showed angiosarcoma with considerable mitoses. Radical operation was advised. Excision of the lip in October 1909, showed an elevated, hard, indurated ulcer the size of a ten cent piece. The tongue was covered with leukoplakia spots, one of which was nodular. One neck gland under the chin and two in the left submandibular region were involved. The Wassermann test was 4 plus. After antisyphilitic treatment consisting of four intravenous and six intramuscular injections and the local application of mercurial ointment the mass on the lip and the neck glands disappeared. As the Wassermann reaction remained unchanged, the antisyphilitic

treatment was continued. In February 1911 the Wassermann test was negative. In May 1913 the patient reported excellent health and continued negative Wassermann reaction.

Case 6. A man aged 40 years sought treatment for a sore at the base of the tongue which had been noticed for nine months. The Wassermann reaction had been negative. A diagnosis of cancer was made and radical removal of the tongue advised. Examination in June 1907 showed a deep ulceration 2.5 cm. wide extending backward from the anterior one third of the dorsum of the tongue to the epiglottis, also enlarged cervical and axillary lymph glands. Two pathologists reporting on section excluded cancer. After few weeks of atrophy the ulceration disappeared. There was no recurrence for six years. The patient was last sight of during the recent war.

Case 7. The patient was born aged 3 years, whose tongue showed a swelling the size of a cherry which had been present for eight months and had begun to grow large. The tumor diagnosed as malignant and the patient referred for radical operation. Examination in March, 1914 showed an irregularly edged tumor the size of about situated on the right margin of the tongue and extending nearly to the center. The surface of the tongue was art like and much inflamed. The lesion was diagnosed as benign and the growth and ulcerated area were removed. The pathologic report was lymphangiosarcoma, papillomatous type. Three months later as growth of the mouth was removed. There was no recurrence for more than eight years.

Cases 5, 6, and 7 demonstrate that lesions of the tongue may be mistakenly diagnosed and treated as cancer.

P. C. W. S. M. M.

BIBLIOGRAPHY of CURRENT LITERATURE

GENERAL SURGERY—SURGICAL TECHNIQUE

NOTE.—The bold face figures in brackets at the right of references indicate the page of this issue on which an abstract of the article referred to may be found

Operative Surgery and Technique

- The Italian plastic method G B RANNEY Cincinnati J M 9 2, 21, 235
The passing of the endow boogie W K TUCK Therap d Gynec 9 2, 1704, 235
Improvements in pre-operative and postoperative care F B T ELLOR, W J TERRY and W C ALBERT J Am M Ass, 10 2, 1002, 578 [72]
The introduction of ether into the abdominal cavity for the prevention of peritonitis A E M VOELSTAND Journal Anaesthesia anaesthetisch belevoci 9 2, 1704, 95
Postoperative adhesions in the abdominal cavity A Mayer Zentralbl f Gynak 9 2, 214, 940 [73]

Anesthetics

- Observations of an anesthetist D RAPPOPORT Am J Surg 922, xxxvi, Anes Supp 97
Factors influencing general anesthesia R S ADAMS Am J Surg 9 2, 1704, Anes Supp 98
Tonic by-effects of the atropine group R M W TERRY Am J Surg 92 xxxv Anes Supp 9
Surgical anesthesia with morphine J JIA Spitalbl 9 2, 21, 210
Why is the escaping blood dark colored in too deep narcosis F ROTT and LILJENROTH J Am M Ass 922 Wechschr 9 2, 1002, 77 [74]

- On reflexes (including abdominal rigidity and shock) under full general anesthesia J D MORTIMER Med Press 9 922 25
T cases of epileptiform convulsions during anesthesia H H L P TON Lancet 9 922 83
A study of metabolism in chloroform poisoning F P UNDERHILL and R KATZMAN J Met Research 9 2, 57
The new anesthesia procedure of Gauss and Wieland BERENDT Zentralbl f Gynak 9 2, 214, 940 [74]
Remarks on the technique of uterine cradle in obstetrics A F G KOTZ Am J Surg 9 2, 1704, Anes Supp 94
Strychnine analgesia J T G TERRY and J OLLIVER Am J Surg 9 2, 1704, Anes Supp
Strychnine analgesia: clinical observations J M RICE Am J Surg 9 2, 1704, Anes Supp 94
Temporary disturbances due to local anesthetics L L ROSS J Lab & Clin Med 9 2, 1002, 77 [75]

Surgical Instruments and Apparatus

- A new instrument for opening abscesses in the laryngopharynx J R SMITH J Am M Ass 9 2, 1002, 315
A cannula which moistens, cleanses, and airtight the inspired air and simulates the normal mechanism of coughing HANAUER Monatsschr f Ohrenh 9 2, 1002, 50
A new forceps for use in the dissection of nerves P JAEGER Rev Assoc med argent 9 2, 1002, 38

SURGERY OF THE HEAD AND NECK

Head

- The structure of the vertebrate head W B PENDERGAST Brit M J 922 14, 706
Fractures of the skull F SACRY South M J 9 2, 1002, 115
Fracture of the skull its embedding of the fragments GUTHRIE Rev Assoc med argent 92 xxxv 965
Surgical operations on gunshot wounds of the skull and its contents during the air 914-9 7 M O FERRERA Kasper M J 92 2, 9 [74]
The circulation of the cerebrospinal fluid its importance in acute cranial injury H JACKSON J Am M Ass 922 1002, 304
Infection of the sigmoid and lateral sinuses report of nineteen cases H I LILLIE Surg Gynec & Obst 9 2, 1002, 48 [74]
Lateral sinus thrombosis D M CAMPBELL Laryngoscope, 1922, xxxii, 775
Hydrocephalus J FRANK and N M DOTT Brit J Surg 922 2, 65
The differential diagnosis of cephalocle GROSS Am J Clin Med 9 2, 1002, 713

- Atrocities of the brain A D McCABRE J-Lancet, 922, 214, 314
Spontaneous occipital pneumocele of anastoid origin operation, recovery L RIVINGTON and G WONES Bull et mémoires Soc de chir de Par 1922, xxvii, 977 [75]
Infundibulum of the hypophyseal type and the trigeminal-Robertson sign associated with tumor of the thalamic portion of the third ventricle infiltrating the optic chiasm but not involving the infundibulum or the hypophyseal region A RUCALOVSKI Bull et mémoires Soc méd d hôp de Par 922, xvi, 38 [76]
Cerebral abscess following old meningeal hemorrhage H C FLECK Pettenyhouse M J 1922, xxvi, 8
A case of brain abscess of unusual etiology S SLEIGHT J Am M Ass 922, 1002, 147 [76]
Medical aspects of brain tumor G A Loevo Nebraska State M J 922, vii, 340
Mixed tumors of the face N Pat Best path Anat abg Path 9 2, 1002, 96
The permanent cure of trigeminal neuralgia W T COVOUTH J Missouri State M Ass, 922, xii, 49
Facial prosthesis JENSEN Am J Clin Med 9 2, 1002, 770

- Rhinodermoma II GOSMAN N York M J & Med Rec, 192, 1911, 39.
 The restoration of the maxilla bone II BARNES Brit M J 19 11, 675.
 The reconstruction of the lateral maxillary arch by osteoplastic fracture Zentralbl f Chir 19 1911, 949 [76].
 Some points of technique in cleft palate surgery J A PERRY Internat J Otolaryngol Oral Surg & Rhinology 10 2, 1911, 511.
 Harelip and cleft palate deformities, some of the types and their operative treatment W B MANN Ann Surg 19 2, 1911, 131 [77].
 The operative treatment of complete double harelip V A A Ann Surg 9 2, 1911, 41 [77].
 A large operant defect in the pharynx covered by primary transplantation of flaps II FRIEDL Zentralbl f Chir 1911, 114, 979 [79].

Neck

- Report of a case of suppurative cervical lymphadenitis in a tuberculous patient due to oral infection II BACOT Dental Cosmos, 912, 1911, 1056.
 A case of echinococcus disease of the submaxillary gland A. A. DUBOIS Zentralbl Med J 9 2, Jan Feb 4.
 The thyroid in infancy T L BERNARD Minnesota Med 1911, 591.

- Studies of thyroid disorders. IV. The intravenous administration of glucose solution in the treatment of exophthalmic goiter following thyroid operations L. COHEN and E. J. BARNES N York Med J M 912 1911, 450.
 Struma and intratracheal struma of the opposite side W. LANGE Zentralbl f Chir 9 1911, 35.
 Goulet reports of the examination of 115 students J G T. YOUNG Wisconsin M J 911 1911, 81.
 The degenerate risk goiter M B TOLSON J Am M Ass 9 2, 1911, 29 [79].
 The basal metabolism in non toxic goiter and its border line thyroid cases, with particular reference to its bearing on the differential diagnosis J H. MANN and H. W. B. ORR Arch Int Med 91 1911, 307.
 A study of exophthalmic goiter and the involuntary nervous system IX. An estimation of the pathogenesis and the evaluation of therapeutic procedures in exophthalmic goiter L. KERN, C. C. LEE, and H. T. HIRN J Am M Ass 9 1911, 211.
 A non-surgical method of treating toxic goiter ROBERTSON Am J Clin Med 912, 1911, 341.
 Thyrotoxicosis M O H. GILES Med J Australia, 9 1, 1911.
 Thyroid surgery and the rhinoidal process exophthalmos J R. EASTON and S. EASTON Ann Surg 9 2, 1911, 415.
 The causes of surgical failure in hyperthyroidism J. F. LEE and H. S. IRVING J Am M Ass 9 2, 1911, 190.
 The saline content of the blood following thyroidectomy W. A. HENSON J Exper Med 9 2, 1911, 469.

SURGERY OF THE CHEST

Chest Wall and Breast

- The surgical treatment of acute suppurative pleuritis L. HENSTON, Special, 1911 1911, 34.
 Empyema J T. GARCOYR Illinois M J 9 2, 1911, 155.
 The pathology and bacteriology of empyema and abscess of the lung J. MILLER Canadian M Ass J 912, 1911, 7.
 The treatment of empyema J B. MACLEARY Wiscen M J 91 1911, 78.
 The closed method of treating empyema J. I. WILCOX J Lancet, 1911, 1911, 34.
 Tumors of the breast G. R. WHITE J Med Ass Georgia, 91 1911, 385.
 Tumors of the breasts J C. BARNES Northwest Med 9 2, 1911, 135 [80].
 The diagnosis and treatment of tumors of the breast J L. LAURENCE J Med Ass Georgia, 9 2, 1911, 385.
 Paget's disease C. CLARK N. Y. Ann Int Chir 912 1911, 300.
 Carcinoma of the breast, its diagnosis and treatment C. F. MANNING J Missouri State M Ass 19 2, 1911, 45.
 The treatment of cancer of the breast, T H. KATZ Minnesota Med 19 2, 1911, 356.

Trachea and Lung

- The comparative value of the exploratory methods employed today for the localization of lesions of the lung and pleura I. SYMOND Pyrene Med Pa 91 1911, 105.
 Abscess of the lung A. L. LOCKWOOD Surg & Rec & Obst, 91 1911, 337.
 Broncholithiasis report of case A. R. FILLIOTT J Am M Ass 9 2, 1911, 131.
 Loss of sight in cases of artificial pneumothorax L. S. T. BURRILL and M. V. GARDNER Lancet, 1911, 1911, 80.

Heart and Vascular System

- Hydatid cysts of the heart with report of case II W. MILLER Surg Gynec & Obst 9 1911, 431 [80].
 Sarcoma of the heart II I. COHEN Med Times, 9 2, 1911.
 A case of rupture of perforated wound of the ascending aorta J J. DUNN Kansas Medical Postgraduate, 1911, 1911, 1911.

Pharynx and Esophagus

- The esophagoscope in diagnosis and treatment M. E. PERRY Kentucky M J 9 1911, 7.
 Acute disease of the esophagus the dietary regimen and the diet A. R. BELL Brit Med J 91 1911, 380.
 The early diagnosis of stricture of the esophagus produced by caustics J. LAURENCE G. GOSSETT, 9 1911, 304.
 Carcinoma of the esophagus with perforation of the aorta J J. WILCOX J Am M Ass 19 2, 1911, 115.

Miscellaneous

- Studies on the respiratory organs in health and disease J. A. M. and L. M. VILLAS J Lancet, 91 1911, 1911, 1911.
 The abdominal signs and symptoms of thoracic disease II BACOT Northwest Med 19 1911, 1911, 1911.
 Congenital deficiency of the diaphragm J S. LATT Am J Dis Child 91 1911, 297.
 Diaphragmatic hernia J R. MILLER Nebad State M J 912, 1911, 145.
 Diaphragmatic hernia—non traumatic, with report of two surgical cases II KERN J Missouri State M Ass 912, 1911, 45.
 Congenital diaphragmatic hernia J H. W. B. ORR J Surg 91 2, 1911, 1911.

Diaphragmatic hernia in newborn report of case
C M DAVIS *Am J Dis Child* 93 xxiv 356
The diagnosis and surgical treatment of incarcerated
diaphragmatic hernia A SOER *Deutsche Ztschr f*
Chir 922, clxxx, 82

Angiosarcoma of the mediastinum B KOTT *Deutsche*
med Wchnschr 9 2, xlviii, 94
Mediastinal lymphosarcoma invading the myocardium
WOLFF and GIER *Bull et mém Soc anat de Par* 922
321, 340

SURGERY OF THE ABDOMEN

Abdominal Wall and Peritoneum

An inguinal hernia N F SINGLARI *Lancet*, 19 cm,
76
Direct and indirect inguinal hernia on the same side
H E S STIVEN *Lancet*, 9 cm, 763
Recurrences following operations for inguinal hernia
W FULLER *Surg Gynec & Obst* 922, xxxv 327
Operative injury of the bladder during herniotomy
because of an incarcerated inguinal hernia S S KLEIN
Westn Chir paper on obstetrics, 922, 1, 69
Recurrences following operations for inguinal hernia
W HENNER *Surg Gynec & Obst* 9 xxxv 43
Unusual complications in the cases of femoral hernia
S L LUTHER *Brit J Surg* 922, x, 297
The hernia operation under local anaesthesia S R
BRIDGEMAN *Internat J Surg* 9 xxxv 333
The prognosis of the radical cure of hernia W T GRINA
Strad Illinois M J 922 xlv, 287
The morbidity of hernioplasty H N MACKLENNER
Am J Surg 922 xxxvi, 241
General septic peritonitis and its treatment A C
BRODIE *Northwest Med* 922, xxx, 36 [67]
The surgical treatment of peritonitis from induced
abortion W SCHWAB *Monsatschr f Geburtsh Gynaek*
922, lxxvi, 40
The clinical significance of abdominal adhesions J
FARMER and T H MORRISON *South M J* 9 2,
21, 504

Gastro-Intestinal Tract

Aphorisms concerning gastroduodenal diagnosis L G
COLE *Am J Surg* 19 2, xxxvi 349
A case of congenital pyloric stenosis A N FETTER
Brit M J 1922, 4, 644
Experimental pyloric stenosis I H TOMPKINS and M
A BERNARD *Am J Dis Child* 92 xxv 306
Hypertrophic stenosis of the pylorus J C OLIVER *Ann*
Surg 1922, lxxvi, 444 [62]
Congenital hypertrophic pyloric stenosis and its treat-
ment with trophic b V HALL *Am J Med* 9
lxxvi, 314
The symptomatology of an extensive stenosis of the
stomach R A LA JA *Ann Med* 9 2, 1, 8
The surgical treatment of syphilis of the stomach E A
CHAMBER *Ann Surg* 9 lxxvi 449 [63]
Multiple polyps of the stomach with the report of
case G P MILLIS *Brit J Surg* 9 2, 20
Gastric lacer J SCHULZ *Wassnachs geschw*
1 xlviii, 9 1, 2, 7
The origin of gastric ulcers from eating hot food and
eating fast A HERRA *Med Klin* 9 xlviii, 925
The diagnosis and treatment of peptic ulcer and gall
bladder disease D DEAL and C W MILLER *Illinois*
M J 9 xlv, 20
Gastric and duodenal ulcer C I SCHUBERT *Ann Surg*,
9 lxxvi, 470 [63]
Gastric and duodenal ulcer and cancer G W CRILE
Ann Surg 1922 lxxvi, 477 [63]
The peptic ulcer of the stomach and duodenum
KRECHMER *Med Klin* 9 xlvii, 894

The hour glass stomach in the dorsal position K HIRT
KRECHMER and L RIECH *Wien Arch f mod Med*
9 2, iv 279
Investigations of the histology and healing of gastric
and duodenal ulcer E PERMA *Acta chirurg Scand*,
92 iv 286 [64]
The problems and the progress of gastric ulcer surgery
W VAN HOO *Med Press*, 9 clxiv 369 [64]
Parenteral stoma treatment of gastric and duo-
denal ulcer B O PRIBRAM *Med Klin* 9 2, cviii,
958
A simple non-operative method of treating gastric ulcer
preliminary report A A LENTZ *J Am M Ass* 9
lxxvi, 3
The choice of operation for gastric ulcer G WOOLLEY
Ann Surg 922, lxxvi, 476 [64]
The surgical treatment of gastropyloric and pyloric
ulceration G WAGNER *Brit M J* 9 2, ii, 420
The von Laueberg fistula of the pylorus T T IN
ALLER *Omnibiot*, 9 2, lxxvi, 67
Intussusception of the stomach following gastro-entere-
stomy R LUTHER *Ann Surg* 9, lxxvi 543
Late results of gastro-enterostomy E H POOL and P
A DYKER *Ann Surg* 922, lxxvi, 457
The treatment of callosa gastric ulcer by trans-entri-
cula excision by the Knake method M STURM *Beitr*
Klin Chir 922, clxxv, 400 [67]
Acute perforation of carcinoma of the stomach M
BAUM *Zentralbl f Chir* 922 xlv, 96
Gastrostomy for cancer of the stomach J M RE
STRICK *Rev Clin* 922, ii, 33
The surgical treatment of gastric and intestinal he-
morrhage H FRIEDRICH *Wien med Wchnschr* 922,
lxxvi, 845, 846, 940
Injury to the bowel with recurrent hemorrhage M
HOLZ *Brit M J*, 922 ii, 689
Acute intestinal obstruction in infancy and childhood
brief review of fifty five cases E W PATTERSON *Surg*
Gynec & Obst 9 xxv, 436 [67]
Three cases of intestinal obstruction H I HOLMES
Med J Australia, 9 2, ii, 328
Intussusception review of recent literature and re-
port of cases G SCHWARTZ *N York M J & Med Rec*
922, clxxi, 449
Six cases of intussusception after operation H WHITE
LOCKE *Proc Roy Soc Med Lond* 922, xv Sect Dis
Child 57
Acute intestinal obstruction J O'CONNOR *Brit M J*,
922, ii, 598 [68]
A note on the cases of gall stone ileus F C PETERS
Lancet, 9 2, clxxi, 8
The treatment of ileus with lumbar anesthesia WAGNER
Zentralbl f Gynaek, 92 xlv, 225
A foreign body lodged in the duodenum C A PRINCE
Med Klin 9, xlvii, 16
The removal of pen from the third part of the duode-
num E F HIGGINS *Brit J Surg* 9 2, x, 30
Gastric ankylosis and duodenal lesions G LENO *Riforma*
med 9 2, xxxviii, 916
Duodenal ulcer C ROWTER *Practitioner*, 9 2, clx,
283

The course of the duodenal fistula after resection of the stomach. O. HERRING. *Zentralbl. f. Chir.* 412, 215, 1913.

The straight vessel of the terminal ileum. R. L. P. BRYCE. *Gynec. & Obst.* 9, 337, 1913.

Intestinal fecal infection. R. MARTIN. *Ann. Surg.* 57, 51, 1913.

Intestinal diverticula. JACQUEMY. *Chap. med.* 9, 2, 1913.

The diagnosis and treatment of anastomotic colitis. A. C. RAPP. *Int. J. St. Sc.* 19, 175, 1913.

Malabsorption syndromes of the colon and rectum. J. J. JONES. *Bull. St. J.* 19, 2, 21, 1913.

The result of the operative treatment of carcinoma of the colon in the Aberdeen Hospital. J. HARRIS. *Zentralbl. f. Chir.* 9, 2, 215, 1913.

Specimens showing carcinoma of the pericolic colon and rectum co-existing and causing acute obstruction. C. GORDON. *Proc. Roy. Soc. Med. Lond.* 9, 1913.

Position of the appendix. A. H. HARRIS. *Deutsch. med. Wochenschr.* 9, 2, 4, 1913.

Appendicitis. M. I. HARRIS. *Minnesota M. J.* 9, 2, 2, 1913.

Acute appendicitis. R. L. S. MINNEMATA. *Med.* 9, 1913.

574. Traumatic appendicitis—a case of acute peritonitis probably caused by external trauma. H. G. LARSEN. *Minnesota M. J.* 9, 2, 2, 1913.

The clinical diagnosis of acute appendicitis and acute right salpingitis. M. MINNEMATA. *Lancet*, 421, 1913.

Carcinoma of the appendix. J. VON KATZ. *Deutsch. med. Wochenschr.* 19, 2, 2, 1913.

The pericolic form of appendicitis. C. POLAK. *Canad. J. Med.* 9, 2, 2, 1913.

The chronic febrile form of appendicitis (the connective tissue type). C. POLAK. *Canad. J. Med.* 9, 2, 2, 1913.

The prevalence of duodenal fistula in appendicitis. J. W. POTT. *Indiana M. J.* 9, 2, 2, 1913.

Intestinal operation in appendicitis. JACOB. *Brit. J. Surg.* 19, 2, 2, 1913.

Prognosis of the transverse colon. G. F. C. VAN. *J. Nat. M. Assn.* 19, 2, 2, 1913.

Prognosis of the rectum in children. L. G. VAN. *Ann. Surg.* 9, 2, 2, 1913.

T. of rupture of the rectum communicating with the peritoneal cavity. W. G. VAN. *Brit. J. Surg.* 19, 2, 2, 1913.

Two cases of rare diseases of the rectum. M. A. HARRIS. *West. J. Chir.* 19, 2, 2, 1913.

Retention cyst of the rectum. R. MARTIN. *Proc. Roy. Soc. Med. Lond.* 19, 2, 2, 1913.

Ulceration of the rectum with perforation into the pelvic cavity and prolapse of the Denon perianal. C. H. CARR. *Brit. J. Surg.* 19, 2, 2, 1913.

Rectal fistula involving the internal sphincter muscles. C. J. DRYDEN. *Minnesota M. J.* 19, 2, 2, 1913.

Case of retroperitoneal carcinoma (chordoma) with microscopic report on sections from the tumor. C. GORDON. *Proc. Roy. Soc. Med. Lond.* 19, 2, 2, 1913.

The treatment of cancer of the rectum. R. L. CARR. *Ann. Surg.* 19, 2, 2, 1913.

Notes on rectal surgery. J. H. 2. HARRIS. *Virginia M. Month.* 19, 2, 2, 1913.

Altogether of achievement in the treatment of cancer of the rectum. F. J. HARRIS. *Zentralbl. f. Chir.* 19, 2, 2, 1913.

Common errors in the treatment of rectal carcinoma. P. LOCKHART. *Memorial Publication* 9, 2, 2, 1913.

Hypertrophied anal papillae. C. J. DRYDEN. *N. York M. J. & Med. Rec.* 19, 2, 2, 1913.

Non-anastomotic treatment of hemorrhoids. B. STONE. *Monograph Recorder* 19, 2, 2, 1913.

The anastomotic treatment of hemorrhoids. J. D. SCOTT. *Minnesota M. Month.* 19, 2, 2, 1913.

A case of pythiosis of the rectum. P. LOCKHART. *Proc. Roy. Soc. Med. Lond.* 19, 2, 2, 1913.

Liver, Gall Bladder, Pancreas, and Spleen

An epidemic of infectious mononucleosis. G. G. W. CARR. *Texas M. J.* 9, 2, 2, 1913.

Hepatic cysts. The aid of support of the liver plastic of the abdominal wall. The aid of resection of the liver. J. J. HARRIS. *Zentralbl. f. Chir.* 9, 2, 2, 1913.

Two cases of pythiosis of the liver with symptoms of abscess formation. W. H. H. HARRIS. *Glasgow M. J.* 1913.

Abstract of the letter of O. BLACK. *Internat. J. Surg.* 9, 2, 2, 1913.

The histology of the gall bladder. J. G. DRYDEN. *Ann. Surg.* 19, 2, 2, 1913.

The histology of human cystic duct. D. G. HARRIS. *Proc. Roy. Soc. Med. Lond.* 19, 2, 2, 1913.

The histology of the gall bladder and pancreatic duct. The aid of the clinical diagnosis and treatment. J. HARRIS. *Ohio State M. J.* 9, 2, 2, 1913.

The histology of the gall bladder and biliary apparatus. J. HARRIS. *Ohio State M. J.* 9, 2, 2, 1913.

The histology of the gall bladder. W. HARRIS. *Canadian M. Assn. J.* 19, 2, 2, 1913.

Torsion of the gall bladder. C. H. HARRIS. *Brit. J. Surg.* 19, 2, 2, 1913.

Chronic cholecystitis. Improved by duodenal lavage. C. HARRIS. *Canad. J. Med.* 19, 2, 2, 1913.

Four cases of adenomyoma of the gall bladder. L. HARRIS. *Chir. & Gynec. & Obst.* 19, 2, 2, 1913.

Cholecystitis. From an experimental standpoint. G. HARRIS. *P. H. P. P. Surg. Gynec. & Obst.* 9, 2, 2, 1913.

Cholecystitis. (or cholelithiasis). A. J. DRYDEN. *Brit. J. Surg.* 19, 2, 2, 1913.

The surgery of the acute gall bladder. W. A. HARRIS. *J. Med. & Surg.* 9, 2, 2, 1913.

Diseases of the pancreas. C. HARRIS. *Zentralbl. f. Chir.* 19, 2, 2, 1913.

Acute pancreatitis. Case report. A. S. HARRIS. *Virginia M. Month.* 19, 2, 2, 1913.

Chronic pancreatitis. A case report. A. S. HARRIS. *Brit. J. Surg.* 19, 2, 2, 1913.

Tramatic pancreatitis. E. HARRIS. *Ann. Surg.* 19, 2, 2, 1913.

Case report—a large pancreatic cyst. C. T. HARRIS. *Canad. J. Med.* 19, 2, 2, 1913.

Pancreatic fibrosis obstructing the common bile duct and duodenum. Five cases of active life after cholecystectomy and gastrojejunostomy. Before death from cancer. W. G. HARRIS. *Brit. J. Surg.* 19, 2, 2, 1913.

Post-traumatic calcification of the pancreas with diabetes. W. G. HARRIS. *Ann. Surg.* 19, 2, 2, 1913.

Notes on pancreatic stones. A case report. C. HARRIS. *Ann. Surg.* 19, 2, 2, 1913.

The typical anatomy of the pancreas originating in the liver. H. GORDON. *J. Cancer Research*, 19, 2, 2, 1913.

Spontaneous congenital intracystic stenosis. H. HARRIS. *Deutsche Ztschr. f. Chir.* 19, 2, 2, 1913.

Miscellaneous

- The differential diagnosis of abdominal pain C S
STANLEY Illinois M J 9 xlv, 274
The acute abdomen II B BORDEN Nebraska State
M J 932, vii, 347
A mesenteric cyst of jejunal origin complicated by
retroileal position of the transverse colon J I HENNER
Brit M J 9 2, ii, 800
Sclerotic abscess II M CLUTE Boston M & S J
9 2, clxxvii, 68 [91]

- Drainage in abdominal emergencies F F S SMITH
Indian M Gaz 192 iv, 375
The enteropneustic abdomen: developmental factors and
treatment J B FITZ J Med Ass Georgia 9 xi, 43
Intra-abdominal gutta A L LARIN South M J
922, xv, 87
Torsions of the omentum C WOURT Zentralbl f
Chir 92 xlix, 000
A peculiar case of omental torsion as contribution to
the origin of abdominal pain F CEN. etc Zentralbl f
Chir 92 xlix, 1248

SURGERY OF THE EXTREMITIES

Conditions of the Bones, Joints, Muscles,
Tendons, Etc.

- Pain due to iliofemoral impingement F J GARDNER
J Bone & Joint Surg 9 iv, 705
Disturbances at the epiphyses during adolescence B
VALSTEIN Med Klin 9 2, xviii, 96
The anatomy of the bone marrow A PETER B 2 M
J 932, 4, 79
Iatrogenic bone marrow studies: preliminary report
Part I Description of marrow trephines and experimental
studies L M MORGAN and E H FALCOWITZ Arch Int
Med 922, xxi, 435
Iatrogenic bone marrow studies: Part II Surgery of
the clauical field L M MORGAN and E H FALCOWITZ
Arch Int Med 922, xxi, 490
Infantile rickets: the significance of clinical radiographic,
and chemical examinations in its diagnosis and incidence
A P HINE and L J UNDER Ars J Dis Child 9
xxv, 377
Studies on experimental rickets P G SHIPLEY J
Bone & Joint Surg 9 2, iv, 67
Experimental rickets in rats VII The prevention of
rickets by sunlight, by the rays of the mercury arc
lamp, and by the carbon arc lamp A P HINE, L J
UNDER, and A M PARRINGTON J Exper M 9 2,
xxvii, 477
Experimental rickets in rats VIII The effect of the
roentgen rays A P HINE, L J UNDER, and J M
STEVENS J Exper M 9 xxvii, 447
Studies on selective ultraviolet radiation in the preven-
tion of experimental rickets A J PARNELL Med Herald,
9 xli, 293
Bone trophy B BROOKS South M J 19 xv, 83
The roentgen ray diagnosis of tuberculosis of the bones
and joints A E WALLACE Canadian M Ass J 922
xi, 798
Acute osteomyelitis F L HURF N York M J &
Med Rec 192 cxvi, 445
Chronic non-suppurative osteomyelitis in the adult: its
primary focal necrosis of the diaphysis A WICKELMAN
Arch Klin Chir 9 2, cxv, 26 [92]
Hemorrhagic osteomyelitis G BARNER J Bone &
Joint Surg 9 2, iv, 655 [92]
Two cases of bone regeneration after osteomyelitis
A P DOUGLAS PARKER Proc Roy Soc Med Lond
922, xv Sec Dis Child 93
The pathology of osteitis deformans Paget disease
S M CORSE J Bone & Joint Surg 9 2, iv, 75
Central bone tumors and their differential diagnosis
with special reference to the latent and unhealed bone cysts
in adults J C BLOOMGOOD Minnesota Med 92
604
Primary multiple sarcomata of the bones B MAYER
Polishk. Russk. 9 xxv, xxi, 473 [93]

- Bone sarcoma: its prevalence in Massachusetts I A
COHEN Boston M & S J 9 clxxviii, 543
Sarcoma of the long bones R F TOLLEMAN Pacific
Coast J Microscop 9 xxviii, 32
Periosteal sarcoma in association with osteomyelitis:
report of three cases R L KROON Surg Gyneec &
Obst 9 xxv, 440 [93]
Carcinoma of the bone marrow A PETER B 2 M
J Surg 9 2, iv, 35
The origin of parodontal arthritis LUTER Zentralbl f
Chir 9 xlix,
A case of gonorrheal arthritis R O BELLE N
Semaine med 9 2, xxv, 351
The second great type of chronic arthritis L W EL
California State J M 9 xv, 390
The biology of the formation of joint in H ZIEGLER &
Zentralbl f Chir 9 xlix, 060
The pathology of tuberculosis of the joints: study from
the clinical standpoint M H ROBERTS J Bone & Joint
Surg 9 2, 670 [92]
Developmental malformations in the skeleton following
juvenile arthritis deformans S ELIASMAN Ztschr f
Kinderheilk 922, xxxiii, 55
An unusual case of eroded calcifying fasciitis with
extensive calcareous intermuscular deposits H LOWRY
Arch Pennsylvania M J 922, xxi,
Acute tendovaginitis G VINCENT Acta chirurg
Scand 9 iv, 24
A muscle anoma of the deep musculature of the neck
(the rhomboides minor muscle) H FRIEDBERG Wien
Abn Wchenschr 9 2, cxv, 269 [93]
Metastatic melanoma of the scapula F D CALLEN
Brit J Surg 922, 2, 290
Scapula scapulothorax J H O RUIZ Ardet Tydscr
Geneesk 92 lxxv, 65
The general diagnosis of diseases of the hip not
due directly to trauma J WITTENBERG Med
Wchenschr 922, lxxv, 98
Congenital abscess in the femur of a newborn child
A KALO GyG Obstet 9 344
A case of sarcoma of the knee K V MAYNARD
Indian M Gaz 92 lxxv, 377
Demarcation processes in the center of ossification of the
tuberosity of the tibia W R BRADEN Nory Chir
Arch 9 2, 4, 3 [94]
A case of bilateral Schiatter's disease in a
6-year old football player MAYOR Zentralbl f Chir 9
xlix
The American foot H B LARRY J Michigan Stat
M Soc 9 xxi, 43
The modern treatment of oval or flat foot G J
McKENNEY California Stat J M 9 2, xi, 337
The question of non-traumatic metatarsal tumors
C DEUTSCHMAYER Zentralbl f Chir 922, xlix,
975

Fractures and Dislocations

- The treatment of fractures O C MOURMAY J Iowa State M Soc 92 xii 404
- Unusual fractures due to injuries: risk and results of operative treatment in 100 cases A P MITCHELL Brit J Surg 1922, x, 39 [95]
- The treatment of labial lesion of the shoulder H HANFARTL Zentralbl f Chir 1922, xix, 140
- The treatment of fractures near the shoulder elbow and wrist W H HANFARTL South M J 19 15 833
- The Davis method of reduction of congenital dislocation of the hip joint W J ALLEN J Bone & Joint Surg 922, 9 iv 805 [96]
- The combined treatment of fractures of the shaft of the femur E L ELLIOTT Surg Gynee & Obst 9 xxiv 500
- Fractures below the upper third of the femur with denervation of an apparatus for fixation C S VAN ALLEN Texas State J M 9 2, xviii, 295
- The late treatment of fractures of the long bones of the lower extremity J T O'FERRALL New Orleans M & S J 1922, lxxv 94

Surgery of the Bones, Joints, Muscles, Tendons, Etc.

- Acromioclavicular from the surgical standpoint P A HENRY New York Arch., 922, h, 83 [95]
- When should osteitic deformities be corrected? GAO ARCH Arch f orthop Unifall Chir 19 2, xi, 430
- The treatment of acute osteomyelitis C HANAU Deutsche med Wochenschr 1922, xlviii 97 [97]
- The treatment of acute osteomyelitis M WOOD Texas State J M 1922, xviii, 299
- Some aspects of the treatment of surgical tuberculosis J T WOOD Brit M J, 1922, ii, 346
- Osteotomy of osteoarthritis: Also discussion of the Springer operation GALTCH Arch f orthop Unifall Chir 1922, xi, 449 [97]

The surgical treatment of traumatic pseudarthroses. two new methods of operation T A GOLJAVITSKY New York Arch 1922, x, 5 [97]

Operative measures to produce ankylosis A MORICCO Ann Ital di chir 1922, i, 543 [98]

The origin and treatment of congenital muscular torticollis J HANFARTL Arch f klin Chir 92, cxviii, 238 [98]

An operation for the lengthening of bone G HAMILTON Texas State J M 9 2, xviii, 293 [99]

Experiments in bone transplantation S M KROVITZ Nederl Maandchr Geneesk 19 1, 2, 664 [99]

A contribution to the study of bone transplantation L MACHOW J de chir 922, xi, 206 [99]

A prosthesis for the thumb S ORILL Acta chirurgica Scand 1922, 1 21

Inquiry into the results of the operative treatment of internal derangement of the knee joint P H ALTMANER Brit J Surg 922, x

Procedures for the improvement of impaired function of the knee joint due to intra articular causes R R FITCH N York State J M 9 2, xviii, 45

The treatment of industrial accidents to the knee joint R H BELLINGER J Am M Ass 9 1922, 207

The treatment of traumatic suppurative arthritis of the knee L MACHOWSKE Zentralbl f Chir 19 2, xix, 120

The application of the wedge principle in the treatment of tibial bridge graft R E KELL Brit J Surg 9 2, 2, 1

Amputations A L LOCKWOOD J Am M Ass 92 lxxix, 1490

Orthopedics in General

Progress in the care and education of crippled children in Ohio under the new laws B O CHAMBERLAIN J Am M Ass 1922, lxxix 207

An apparatus for measuring the position of the legs H DEBEROLTER Fortschrd d Med 9 21 409

A favorable result from orthopedic treatment of severe cases of Lathie disease W O PATTERSON Kansas Med J 9 1, 30

SURGERY OF THE SPINAL COLUMN AND CORD

Cervical rib S W BOONER J Bone & Joint Surgery 922, iv 683

Traumatic back injuries and their treatment J W SEVIER N York State J M 1922, xviii, 430

Curvature and operative treatment of alioptic structural scoliosis A WATSON N York State J M 9 2, xix, 449

The diagnosis of traumatic fractures of the spinal column and identification of rib fracture (Schane) C GOSLER Arch f klin Chir 1922, cxix, 737 [100]

The results of treatment of lateral curvature of the spine J A BROOKER Hawaiian Month 9 1922, 224

Abstract of clinical lecture on two cases of tuberculous of the spine A M FORBES Canadian M Ass J 1922, 22, 733

The technique of the operative immobilization of the spinal column W W HANFARTL Zentralbl f Chir 9 2, xix, 6

Bony bridging in tuberculosis of the spine R R COFIELD J Am M Ass 1922, lxxix, 130

The corall graft in Pott's disease A GALTCH Rev Assoc med argent 9 22 343

Bone in stabilizing operations of the spine L T KROVITZ J Bone & Joint Surg 922 9 iv 7 [101]

The mechanics of new plaster shell in the treatment of Pott's disease in children: the lateral X ray control R P SCHAMBERLAIN J Bone & Joint Surg 9 2, 740

Paraspinal splitting of the spinal column H VON BARTYER Zschir f orthop Chir 922, xix, 366

The operative splitting of the apophyseal spinal column with celluloid staves P PRINCE Zentralbl f Chir 922, xix, 34

Neuropathic arthropathy—Charcot's spine J RUDOLPH and E J HANFARTL J Am M Ass 92 lxxix, 469

Report of two cases of spine infection occurring at Fort Belvoir, Ga H S H. VANCE M d Surgeon, 922, h 4 5

A case of complete section of the dorsal cord by direct contusion: an anatomic-pathologic study A BOMMEL J LAMBERT, and L. CORNILL Rev neurol 9 2, xix, 902 [101]

Spinal cord disease: report of cases J J ALLEN Kentucky M J 9 2, 603

Some observations on the symptomatology of spinal tumors and compression paraplegia T C STEWART Med Press, 922, cxv 3 [101]

The results of the removal of tumors of the spinal cord A W AMORY and W O OTT Arch Neurol & Psy 1922, viii, 530 [102]

SURGERY OF THE NERVOUS SYSTEM

- Peripheral nerve injuries associated with fractures
D. Lewis and E. M. Alpers *Ann Surg* 9 2, 1917,
534 [103]
Experimental results of cable grafts and tubes of fascia
lets in the repair of peripheral nerve defects W. O. Orr
Minnesota Med 922, 7, 58 [104]
Transposition of the ulnar nerve P. Jaconet *Rev*
Assoc med argent 1922, XXXV 377
On the solitary fibromyxoma of peripheral nerve
trunks, with a description of case of cystic fibromyxoma

- of the median nerve E. A. Livell *Brit J Surg* 9
2, 302 [105]
Sarcoma of the median nerve E. R. McGuire and J. L.
Barnes *Surg Gynec & Obst* 922, XXXV 453 [105]
The surgical treatment of peripheral palsy of the facial
nerve J. Jaxo Spital, 92 XII, 33
The surgery of the sympathetic nerve V. Gomory
Spital, 92 XII, 34 [105]
Tabetic guinea crises cured by spinal nerve section
case report L. W. Frank *Kentucky M J* 922 XX, 703

MISCELLANEOUS

Clinical Entities—General Physiological
Conditions

- Chronic multiple acromia W. J. Mayo *Ann Surg*
1922, LXVI, 43
Simultaneous variation in the acidity of different por-
tions of the gastric contents T. W. Warrin *J Am M*
Ass 92 1922, 1499
Primary spontaneous tumors in the kidney and adrenal
of mice studies on the incidence and inheritability of
spontaneous tumors in mice M. Silver, H. F. Hollister, and
H. G. Wells *J Cancer Research*, 9 1, 4, 305
The simultaneous occurrence of tumors in the thyroid,
sternum, and breast M. Ballin and E. C. Monahan *J*
Am M Ass 9 2, 1922, 34
Tumors and their relation to age H. E. Hinshaw
J Cancer Research, 92 VI, 26
Observations on cystic sarcomatous tumors and the
genesis of sarcomatous tumors in general E. Kirsch
Beitr path Anat u allg Path 922, LX, 75 [106]
The tissue reaction in malignant epitheliomas of the
skin its value in diagnosis and in prognosis H. J. Park
Surg Arch Dermat & Syph 9 VI, 40
Precancerous dermatoses W. J. Henson *N York*
M J & Med Rec 9 2, 1922, 167
Modern views of cancer H. C. Saltzstein *J Michigan*
Stat M Soc 922 XII, 439
Cancer from the viewpoint of the pathologist H. H.
Florence *J South Carolina M Soc* 29 XVII, 301
Is cancer biological phenomenon? Some heretic
thoughts on cancer J. G. Gable *J Cancer Research*,
92 VI, 317
What the family physician should know about cancer
C. J. Brooks *N York M J & Med Rec* 9 2, 1922,
397
A study of the drugness of cancer by means of serum
reactions J. A. Sm. MacKinnon *Lancet*, 9 2, 1922,
739 [106]
The relation of molecular activity to carcinoma pre-
liminary report I. Vetterli and A. W. Darlington
J Cancer Research, 92 294
Cancer and parietal I. Kuroki *J Cancer Research*,
922, I, 37
The detection of malignant cells in body fluids P. N.
P. Wron *Lancet*, 9 2, 1922, 76
The estimation of the quality of carcinoma material
O. Fawcett *Zentralbl f Gynak* 9 2, 234, 300
The relation of fibrosis and invagination to longevity
in cancer W. C. MacCarty *J Lab & Clin Med* 922,
24, 4

- The influence upon the growth of transplanted Thomes
Jobling at carcinoma of hydrogen ions and of various
salts in different concentrations K. Stigmar, H. M.
Nyberg, and K. G. Fala *J Cancer Research*, 9 VI
285
Regarding the nature of spontaneous cure of carcinoma
D. B. Royce *Ann Ital di chir* 9 2, 4, 48
Postoperative complications and their treatment
T. A. Swallow *Therap Gaz* 9 XI, 693
Bone formation in operative round osteomas W. M.
Jovis *Ann Surg* 92 LXVI, 549
The treatment of secondarily infected varicose ulcer
of the leg with consideration of the biologic basis of
the bacteria F. Harky *Therap d Gegenw* 9 Jun,
26

Sera, Vaccines, and Ferments

- The galvanic excitability of motor nerves following
parental injection of heterogenous serum O. M. Chazari
and E. Gamper *Deutsche Zeitsch f Chir* 922, LXIII,
265 [106]
Indications for vaccine therapy in acute infections
Wainwright *Am J Clin Med*, 9 XVII, 79
The action of vaccines J. Pratt Jovis *Lancet*,
922 cIII, 75
Vaccinotherapy in surgery DE VLOO Vlaamch
geneesk Tijdsch 9 2, 12, 34
Staphylococcal vaccinotherapy V. Szwedon *Ann Ital*
di chir 9 2, 1, 520
Autogenous vaccine in puerperal fever J. Vetterli
Brit M J, 922, II, 644
Vaccinotherapy for cancer F. Danks Vlaamch
geneesk Tijdsch 9 2, 12, 358

Blood

- The normal hemoglobin standard R. L. Hadow *J Am*
M Ass 922, 1922, 1496
The blood count improvements in method A. C. Al-
port *Lancet*, 9 cIII, 756
The effect of warm and cold weather on the blood
catalase W. E. Burke and J. M. Lenczowski *J Lab*
& Clin Med 922, 24, 33
The growth promoting function of leucocytes A. Car-
roll *J Exper M*, 922, XXXVI, 385
Specific preoprotein reaction of leucocytes L. Hektory
and F. R. Slawetz *J Am M Ass*, 1922, LXVI, 326
The clinical significance of total and differential leu-
cocyte counts, with special reference to acute infections
W. C. Jovis and C. E. Brown *Am J M Sc* 922,
cIII, 333

Retactions—increased percentage of reticulated erythrocytes in the peripheral blood. I. M. KATZMAN *et al.* *J Lab & Clin Med.* 9, 2, viii, 1.

A study of the erythrocyte curve at anoxia and its relationship to the hemoglobin curve. L. H. H. *Arch Int Med.* 191, xix, 479.

The lymphocyte and the Turch cell: their histologic relationship and clinical significance. J. C. M. *Annals and C. V. Pearson.* *Lancet.* 1912, cxxx, 900.

The quantitative determination of glucose and lactose in blood and urine. Preliminary report. W. T. *Annals and C. V. Pearson.* *J Am Med Ass.* 9, ix, 506.

The electrolyte of whole blood: the acid base of the blood in renal disease. J. B. *Russell and H. J. Pratt.* *Arch Int Med.* 9, xix, 57.

The diameter of the red cells in pernicious anemia and in anemia following hemorrhage. C. *Pratt Jo. et al.* *J. Path & Bacteriol.* 9, xiv, 487.

The treatment of certain cases of pernicious anemia with proteins and the pathogenesis of the condition. A. F. *Annals and C. V. Pearson.* *Par.* 9, xix, 373.

The amount of blood to be transfused in anemia of children (blood dosage). T. *Hallgren.* *Am J Dis Child.* 19, xiv, 209.

Hemolysis following transfusion. P. & *Wright.* *J Am Med Ass.* 19, ix, 5.

A simple procedure for testing the circulation (hemolysis) in patients of the extremities. A. *Costello.* *Brit Med J.* 9, xii, 34.

Blood and Lymph Vessels

The causes and cure of arterial hypertension. J. O. *Carson.* *J Lancet.* 191, xix, 309.

The pathogenesis of true transposition of the arteries: the basis of the heart. P. *Hickel.* *Bull et mem Soc anat de Par.* 91, xix, 904.

The conservative treatment of false aneurysms. S. D. *Moscowitz.* *Weyman Med J.* 19, 9, 1877.

A contribution to blood vessel surgery. L. R. *Ellison.* *Internat J Surg.* 9, 2, xxi, 344.

A surgical study of arterial decalcification. C. L. *Callahan.* *California State J M.* 19, 1, xi, 248.

A case of arteriosclerosis of the iliac artery followed by complete and definite recovery. L. *Savoyard and P. Blum.* *Bull Acad de med Par.* 9, lxviii, 84. [1877]

Rupture of the basilar artery complicating backward dislocation of the left elbow. For. *Arch and LeGros.* *Bull et mem Soc anat de Par.* 191, xix, 3.

A case of aneurysm of the aorta with unusual pressure signs. W. S. *Moscowitz.* *California M J.* 1911, xii, 170.

Triple aneurysm of the aorta. L. *Ross.* *Texas State J M.* 9, 2, xix, 17.

Ligation of the aorta. G. T. V. *Chas.* *Ann Surg.* 19, 4, lxxv, 379.

Anomaly of the inferior segment of the inferior vena cava. P. *Wright.* *Bull et mem Soc anat de Par.* 9, 1, xix, 516.

Ligation of the internal iliac artery. W. D. *Hosgood.* *Ann Surg.* 191, lxxv, 520.

Subcutaneous rupture of the popliteal artery: death from shock. I. *Alonso.* *Rev med & Quim.* 9, 2, viii, 10.

Ligation of the femoral artery in the middle of the thigh. J. D. *Dowd.* *J Am Med Ass.* 91, lxxix, 245.

Cases of dilatation of the internal lymphatic glands. *Internat J Surg.* 9, 2, xxi, 344.

Report of a case of spontaneous gangrene simulating pyrexia due to acute thrombo arteritis. D. W. *Kassner.* *York M J & Med Rev.* 1912, cxxx, 304.

Some observations on blood sugar and the alleged glycosuria following operative procedures on the thoracic duct. C. S. *Williamson.* *J Lab & Clin Med.* 91, xi, 9.

Surgical Diagnosis, Pathology and Therapeutics

Diagnosis on basal metabolism. I. P. *Lataste.* *B. J.* 9, 2, 747.

Basal metabolism in medical practice. U. O. *Dalley.* *J Nat M Ass.* 912, xiv, 234.

The Wassermann reaction from the clinician's point of view. C. J. *Brown.* *Cincinnati J M.* 1912, vii, 206.

The Wassermann reaction in non syphilitic cases. T. M. *Dowd.* *Am J M Sc.* 9, 2, cxxx, 514.

A further note upon comparison of the Sachs-Georgi and W. Wassermann reactions in the serological diagnosis of syphilis. R. A. *Kissel.* *Am J M Sc.* 19, cxxx, 53.

The influence of posture on physical signs in the chest. J. B. *Gottlieb.* *South M J.* 9, 2, xv, 371.

New methods of studying gastric peristalsis. W. C. *U. Aron.* *J Am M Ass.* 912, lxxxv, 5.

Hydrochloric acid in gastro-intestinal pathology. J. C. *Jourdain.* *South M J.* 9, 2, xv, 399.

A chemical study of pharyngeal abscess pain with special bearing on the diagnosis of acute subglottic disease. Z. *Com.* *Brit J Surg.* 19, 2, 91.

A plea for the more common use of lumbar puncture. S. & *Gordon.* *Indian M Gaz.* 19, lxx, 377.

Experimental Surgery and Surgical Anæsthesy

Paralysis and apnea tracheotomized. I. *Abbas.* *Gyne & Obst.* 19, xxi, 405. [1877]

Studies on gastric and duodenal secretions: the relation of epigastric hernia to gastric ulcer—a clinical and experimental study. J. *Meyer and A. C. Ivy.* *J Lab & Clin Med.* 19, viii, 37. [1908]

Röntgenology and Radiant Therapy

Physiotherapy and radiology. B. B. *Grover.* *Med Herald.* 9, 2, xii, 297.

Radiology: its use and abuse. R. A. *Morrell.* *Lancet.* 912, cxxi, 748.

The dangers and limitations of the X rays and radium. C. F. *Heaton.* *Colorado Med.* 9, xix, 206.

Radiology in the teaching of anatomy. J. M. *W. Moore.* *Brit M J.* 911, 795.

Potentiometric radiography. J. A. *Hovary.* *Boston M J.* 2, 5, 912, cxxxv, 645.

The effects of the X rays and radium on the blood and general health of radiologists. L. E. *Franklin.* *Am J Roentgenol.* 9, 2, xi, 617.

Operative cases showing the diagnostic value of the X ray. L. J. *Williams.* *New Orleans M J.* 2, 3, 912, lxxv, 77.

Misadventures based upon the position of the extremities of newborn children. E. *Schiller.* *California State J M.* 9, 2, xi, 23.

Röntgen ray radiography. J. *F. Packer.* *J Radiol.* 19, 2, xi, 48.

Some procedures found helpful in making dental roentgenograms. J. A. *Blatt.* *Internat J Orthodont Oral Surg & Radiography.* 912, vi, 66.

The roentgen ray diagnosis of tuberculous cervical lymph glands. J. M. *Hastford.* *Am J M Sc.* 19, cxxx, 539.

Medical aspect of the Workmen's Compensation Law
H D BAY Med Times, 9 2, 1, 60
The acute painful back among industrial employees
alleging compensable injury H R COV J Am M Ass
9 4, 1937

Hospitals; Medical Education and History

The influence of hospital standardization upon preven-
tive medicine C D WILBY Ohio Stat M J 92
224, 1934

Thirty years of surgery 562-193 W B KAY
Boston M & S J 9 1 1937, 39

Legal Medicine

I should as be father liability for operation Cleveland Med Jo (Ark) 30 5 W R p 370
Sutures not liable for gross found in abdomen of hyster-
ectomized patient Parry vs Carter (WVa) 83 N W R p 68
Malpractice provable without expert testimony Cor-
bett v. Reicher et al (Wash) 305 Pac R p 1096

GYNECOLOGY

Uterus

Clinical aspects of uterine prolapse V F MILLER Am
J Obst & Gynec 30 2, 19 305

Uterine duplex incision A WAGROW and W P
SMITH Surg Gynec & Obst 191 227, 1927

The surgical aspect of uterine malposition J A
PERRY N Engl J M 9 2, 316, 38

Accompanying of the female genitalia, especially the
uterus L. HOFFER Monatsschr f Geburtsh Gynaek
19 1, 191, 197

The interpretation and management of certain types of
uterine hemorrhage J D LEEKY Kentucky M J 9
22, 7

Hemostasis of the uterus induced with drugs L P
RAY med de la base Roum 1931, 316, 340

Chronic endometritis and its treatment J W B
LAWET, 1931, COM, 796

A method for the removal of large uterine polyp W
NEILL J Therap (Ind) 92 214, 606

Parocho-dolipcho fibromatous uterine myeloma for
subperitoneal fibrosis M CLARK Bull et notes Soc
anat de Par, 19 2, 204, 215

A study of frozen sections through cadavers showing the
anatomical relations of large uterine myoma J W
WILLIAMS Bull Johns Hopkins Hosp 19 2, 200, 250

Observations on myoma and accident HART-CHURCH
Zentralbl f Gynaek 9 2, 217, 175 [116]

Remarks on the scope and technique of myomectomy
V BOVET Lancet, 1932, COM, 743 [116]

Techniques and results of myomectomy for uterine
fibroids A E GILES Med Press, 9 2, 1937, 330

The evolution of hysteromyomectomy H DE OTT
Gynec et obst 1932, 19, 160 [116]

Carcinoma of the cervix R C GARRETT New Orleans
M & S J 912, 1937, 43

A note on inoperable carcinoma cervix treated with
colloidal copper and colloidal manganese S B BAYTON
Lancet, 19 1937, COM, 861

Vaginal involvement in cancer of the cervix A LITVIN
Brit M J 9 2, 636

Carcinoma of the cervix following gonorrhea in young
women S G LUKER Proc Roy Soc Med Lond 9
27, Sect Obst & Gynec 83

The treatment of carcinoma of the cervix cervix S V
CLARK J Indiana M Ass 92 27, 339

Franklin and the treatment of cancer of the uterus
C A CARRATO Ray Assoc med argent 912, 1937, 395

Cancer of the cervical stump metastases in the renal-
form appendix R T T Vx Surg Gynec and Obst
9 2, 1937, 224 [116]

Adrenal and Post Uterine Conditions

Fibromas of the broad ligament G GROCHARD
and M GROSS RICH, Lysol, 19 2, 21, 30

Fibromas of the ovary G LOAY Bull et notes Soc anat
de Par 9 204, 215

Fibromatosis and endometriosis of the ovary
W B D L J Obs and Gynec Brit Hosp 9 200
44 [117]

The treatment of salpingo-oophoritis J CAMPBELL
Brit M J 9 2, 631

The clinical results of ovarian grafting F DE D VINE
Gynec et obst 9 2, 1, 36 [117]

Degeneration of converted ovaries after hysterectomy
in the rat an experimental study I KORN Am J
Obst & Gynec 9 2, 208

Clinical and embryological report of an extremely early
fetal pregnancy together with study of decidual re-
action, intra uterine and ectopic W A V DOMINIAN
Am J Obst & Gynec 92 19, 57 [117]

Report of case of full term abdominal pregnancy
R A HARTSHORN J Am M Ass 92 1937, 244

Observations upon the pathology and treatment of
hydathoma in the fetus A SCHUCHER Am Obst & Gynec
9 2, 19, 346

External Genitalia

The relation of the ureters to the vagina J C BRASS
Brit M J 10 790

Vaginitis due to trichomonas vaginalis H F KANE
Virginia M Month 92 217, 392

Prolapse of the female urethra and eversion of the
external retinal orifice R R SMITH Am J Nat &
Gynec 9 2, 19, 305 [118]

Miscellaneous

The most common types of narrow pelvis and their
treatment I PRON V J Belg med 9 1937, 599, 8 2,
578

Pelvic pathology and the cardiovascular system W F
DUNNALL Virginia M Month 92 217, 395

The non-operative treatment of pelvic inflammatory
disease I B BLOOM and H M MURPHY, Proc
anat M J 1937, 271, 5

Primary sterility A J ROBERT N York M J & Med
Rec 1937, 271, 490

The treatment of gynecological conditions by the X ray
and radium R KNOX Brit M J 19 2, 678

Clinical mistakes in gynecological diagnosis R I
S RICH California Med J 9 2, 22, 334

OBSTETRICS

Pregnancy and Its Complications

- Phloretone glycoside in the diagnosis of pregnancy
M W HOLLINGSWORTH *California State J M* 9 xi
344
- Widal's leucopenia during pregnancy I S MAZZA &
DONTICO *Rev Assoc med argent* 9 2, xxv 39
- Epidemic encephalitis and pregnancy M SAMOVICI
Rev med d Romania 9 xii, 99
- Times during pregnancy L H KOTEN *Zentralbl f*
Gynak 9 xii 957 [119]
- Second rupture of the uterus complicating pregnancy
F B YOUNG *Nebraska Stat M J* 92 vi, 35
- The extent of the renal lesion in the toxemias of preg-
nancy A B SPALDING, M C SNEYER and T ADAMS
Am J Obst & Gynec 9 xv, 399
- T toxemia of lat pregnancy G M G STAFFORD *New*
Orleans M & S J 9 2, xxv 71
- The treatment of eclampsia T W ENEN *Brit M J*
92 ii, 675
- The results of the treatment of eclampsia by the Dublin
method B SOLOMONS *J Obst & Gynec Brit Emp*
9 2, xxi, 46 [119]
- The cure of the breast during pregnancy and the
puerperium A C BRICK *Med Times*, 922, 1965
- Abortions and cauterizations W G SYMONS *Minne-*
sota Med 9 506
- Uterine septus duplex nix full term twin pregnancy
C J KUCHA *Surg Gynec & Obst* 92 xxv 443

Labor and Its Complications

- The midwife MOWEN *Am J Clin Med* 9 2, xvi
196
- The past present and future of midwifery D P
W RYAN *Brit M J* 9 2, 4, 7
- Anesthetic and anesthesias in labor W O GREEN *Obst*
Brit M J 9 2, 667
- The standardized dosage method of using scopopolamine-
morphine N HICSHINE *Brit M J* 9 669
- The maintenance of obstetrical anesthesia by intradila-
tor and chloroform A I MARTIN *Brit M J* 9
2, 67
- Concurrent labor induction H BRADG *Proc Roy*
Soc Med Lond 9 xi Sect Obst & Gynec 84
- Dystocia due to suprapubic female torsion F L MOWEN
Brit M J 9 643
- A record of the face and brow presentations at the
Providence Hospital B H BURTON and b C
WAGNER *Rhode Island M J* 9 125

- Home management of occipito posterior position C V
RICE *J Oklahoma State M Ass* 92 xv 304
- A case of breech presentation P S N MISRA *Indian*
M Gas 9 2, h 379
- The management of breech cases of labor J R ALLAN
Virginia M Month 9 2, xix, 43
- The care of the perineum during labor or plan of
episiotomy R RIN *Nebraska State M J* 9 2, vii,
334
- Immediate repair of lacerations versus delay A N
PICKETT *Kentucky M J* 9 xi, 590 [119]
- The indications for cesarean section C E D ABERN
Med J Australia, 922 3
- Labor obstructed by solid carcinomatous tumor of the
left ovary cesarean hysterectomy with removal of the
tumor S G LUKER *Proc Roy Soc Med Lond* 9
xv, Sect Obst & Gynec 8
- Cesarean section—obstruction of the vagina M A
T RZ *Cincinnati M J* 9 2, iii 284
- The uterus after cesarean section E P DAVIS *Am*
J Obst & Gynec 922 iv 335 [120]

Puerperium and Its Complications

- A case of acute dilatation of the stomach following
labor B P FORD *J Alabach obstetrical gynecol*
9 xxvii 93
- Retroversions of the uterus following delivery F W
LYNCH *Am J Obst & Gynec* 9 xv 36 [120]
- The treatment of puerperal fever J T ALTMAN
South M J 9 xv 839

Newborn

- The diagnosis and treatment of intracranial hemorrhage
in the newborn report of fourteen treated cases D
MORNO and R S ECHTIS *Am J Dis Child* 9 2, xxv,
73 [120]
- Jaundice in the newborn H ROLLISTON *Canadian*
Pract 9 xlvii, 447

Miscellaneous

- The value of the pathological laboratory to obstetrics
C V VINCIGER *Habsworn Month* 922 ivii, 606
- An analysis of 3000 cases of obstetrics S P FORD
Canadian Pract 9 2, xlvii, 443
- The influence of the placenta on the mammary gland
C M SYMONS *Am J Obst & Gynec* 9 4, 43
[121]

GENITO-URINARY SURGERY

Adren, Kidney and Ureter

- A case of tumor of the suprarenal cortex H C
GILSON *Proc Roy Soc Med Lond* 9 xv Sect
Dis Child 30
- Report of case of ectopic kidney R C B
Virginia M Month 9 xlix, 303
- Hemorrhage of the kidney J J JORDAN, W F BRADG, and
A J SCHULTZ *J Am M Ass* 9 lxix, 9
- The renal factor in diabetes mellitus L H FRYSON
J Minnesota M Ass 9 xix 43

- The estimation of urea, non protein nitrogen, and
creatinine as an index of renal function W A FLORENZ and
J T GYRANOS *J Am M Ass* 9 lxix, 383
- The comparative values of the sodium-cumano and blood
biochemical tests in the estimation of kidney function B
A THOMAS *J Am M Ass* 9 lxix, 387
- Partial activity of the kidney and the still or nothing
principle A R KHA OILAK *J Path & Bacteriol* 922
xiv 44
- Certain renal stenosis and their interpretation W B
COWEN *Lancet*, 192 cccii, 841

- A case of congenital hydrophorosis. W. A. JAMES. *Jama* 51 (12) 9 2, 1914, 377.
- The ruin of hydrophorosis renal atrophy. J. KERNER. *W. M. J. Int. Chir.* 92 11 61.
- New tuberculous infection of the kidney. H. O. MARTZ. *Chauvin M. Rev.* 9 2, 1914, 374.
- Unilateral pyelonephritic infection of the kidney. A. LITVIN. *W. M. J. Int. Chir.* 92 11 305.
- A case of bilateral pyelitis due to the bacillus pyocyaneus as a result of kidney infection diagnosed through arterial catheterization. C. P. M. TREF and A. P. BRET. *J. Urol.* 9 2, 1914, 1.
- Renal functional tests in chronic nephritis. F. H. LANE. *J. Iowa State M. Soc.* 9 2, 1914, 4.
- The relationship of blood concentration to nitrogen retention in experimental nephritis. J. P. UNDERHILL and R. KAPRON. *J. Urol.* 19 397.
- Observations upon the acute distal nephritis, its method suggested for their differentiation. L. J. BORD. *Habermas Monats.* 1922, 191, 408.
- Nitrogen retention in chronic interstitial nephritis and its significance. H. BERNSTEIN. *J. Am. M. Ass.* 9 1914, 1215.
- Observations on a case of diffuse glomerular nephritis. A. M. VALLBO. *De Bismarck* 19 1914, 377.
- The surgical treatment of nephritis and cystic nephrosis. T. ROBERTS. *Acta Chirurg. Scand.* 19 1 36 (122).
- The diagnosis of tuberculosis of the kidney. R. L. LAUREN. *J. Laet.* 92, 1914, 446.
- The epidemiology and diagnosis of renal tuberculosis. J. C. SARGENT. *W. M. J.* 19 1914, 7.
- The diagnosis and treatment of tuberculosis of the renal and urinary tracts. G. BERNARD. *Hygien.* 922 1914, 1 3, 371.
- Pyelitis in children. COSE. *J. Am. Inst. Homoeop.* 9 2, 1914, 11.
- The pathologic changes in experimental pyelitis and bacterial pyelitis. H. F. HARRISON. *J. Urol.* 92 19 30.
- Malignant papilloma of the kidney. W. J. DUNNELL. *Berg. Cyret & Ober.* 922, 1914, 493 (122).
- Report of a case of papilloma of the pelvis of the kidney. O. S. MCCOY. *South M. J.* 9 2, 1914, 4.
- Papillary carcinoma of the kidney. T. C. STELLERMA. *Therap. Gaz.* 9 2, 1914, 634.
- Cytopathology with presentation of cases. I. W. HILL and H. P. DOR. *Grace Hosp. Bull. Detroit.* 9 1914, 1.
- The present status of blood uremia in various lesions of the kidney. W. H. OBERSTADT and J. R. LAUREN. *J. Am. M. Ass.* 922, 1914, 340.
- Some observations upon surgical lesions. J. P. PROCTOR. *J. Med. Am. Georgia.* 9 2, 1914, 304.
- Important factors in kidney surgery. J. H. HARRISON. *J. Oklahoma Soc. M. Ass.* 9 2, 1914, 30.
- When to operate on renal calculi. E. J. BOBBA. *Chirurgia M. Am. J.* 922, 1914, 73.
- Nephrolysis and arteriography. G. KLOTZ. *Habermas M. J.* 9 2, 1914, 379.
- Three cases of multiple concretions in the ureter. K. W. COX. *Urolog. J. Lager.* 19 1914, 3 3.
- Right ureteral calculus passing into pyelitis. M. L. BORD. *J. Am. M. Ass.* 9 1914, 1 7.

Bladder, Urethra and Penis

- Ectropion of the bladder. J. L. BORD. *Surg. Cyret & Ober.* 9 2, 1914, 377.
- The pathology and treatment of Stromyomata of the urinary bladder. L. M. FLOURENCE. *Nova. Chir. Arch.* 9 14, 34 (122).

- Ra. Klotz. cross-sectional removal of Stromyomata of the bladder. B. S. HARRISON. *J. Am. M. Ass.* 922 1914, 304.
- A retrograde study of rupturing into the bladder following the course of the right ureter. W. HARRISON and HARRISON. *Canada M. Ass. J.* 9 2, 1914, 737.
- Traumatic structure of the female ureters. D. TRINER. *Zentral. J. Urol. Ch.* 9 19 424.
- Acute gonorrheal stricture in male of mouth. C. R. CARR. *Habermas Monats.* 9 19 610.
- The development and surgical importance of the rectourethral muscle and Denon's fiber. L. M. H. WARRON. *J. Urol.* 922, 1914, 379.
- Female changes with carcinoma report of case. F. J. FORTIN. *J. Am. M. Ass.* 9 1914, 3 3.

Genital Organs

- The two less diagnosis and treatment of prostatic in the male. C. H. D. SARGE. *J. Med. Soc. New Jersey* 9 2, 1914, 358.
- Gonorrhea prostatic. H. I. C. LARSEN. *Ohio State M. J.* 9 2, 1914, 375.
- Traumatic rupture of the prostate. A. G. GILLO. *Rev. Assoc. med. approx.* 9 2, 1914, 359.
- Testicular dislocation. J. B. MONTANA. *Habermas Monats.* 9 19 610.
- The more recent attempts at transposing the testicle. D. ROSENTHAL. *Med. Klin.* 19 1914, 379.
- Cysts of the epididymus. R. O. WARR. *Laet.* 92 1914, 307.
- A case of sarcomatous of the prostate. personal prostatic carcinoma. radium therapy. HARRISON. *Spital.* 19 19 610.
- Carcinoma of the prostate. R. H. HARRIS and A. TANNER. *J. Am. M. Ass.* 1914, 654 (122).
- Prostatic sarcoma. practical theoretical discussion. G. F. LARSEN. *J. Am. M. Ass.* 92 1914, 3 3.
- Prostatectomy. G. C. LARSEN. *Med. J. Australia.* 9 2, 1914, 408.
- The operative technique of prostatectomy. J. HARRIS. *Spital. Probst. per. Lk.* 9 19 610.
- Prostatectomy. review of 40 cases with results. J. H. HARRIS. *Med. J. Australia.* 9 2, 1914, 402.
- Prostatectomy in case of diabetes impedit. I. LARSEN. *Brit. M. J.* 92 1914, 64.
- A new technique for performing perineal prostatectomy. A. B. C. *J. Am. M. Ass.* 1914, 66 (122).

Miscellaneous

- The extraction and culture of auto urinary clabs in connection with castrating gonorrhea. A. H. J. BORD. *Med. J. Australia.* 9 2, 1914, 400.
- The importance of the anatomical study of the urinary tract. C. H. HARRIS. *Spital. Probst. per. Lk.* 1914, 379.
- Urethral infection. A. S. BORD. *Med. J. Australia.* 92 1914, 401.
- Infection of the urinary tract. Report on 400 cases. I. C. MERRILL. *South M. J.* 1914, 396.
- Remarks on urinary infection. I. LARSEN. *Med. J. Australia.* 92 1914, 401.
- The etiology of urinary infection. J. A. HARRIS. *Med. J. Australia.* 92 1914, 401.
- Urinary infection in child. I. G. CARR. *Med. J. Australia.* 92 1914, 400.
- Hematuria of obscure origin. A. R. HARRIS. *J. Am. M. Ass.* 1914, 302.
- Hematuria as a symptom. A. J. M. WARR. *Habermas Monats.* 9 19 610.
- Interperitoneal pelvic suppuration in the male. I. HARRIS and B. STUART. *J. Urol.* 1914, 3 3.

SURGERY OF THE EYE AND EAR

Eye

- Myopia in occupational diseases D J
L. L. and C. P. McCann N. non Health, 9
6
Some ophthalmological manifestations of disease of the
nervous system J P. IRRAL J Am M Ass 9 2, 1917,
34
Optic neuritis of nasal origin recovery after operation
E. T. SUTTER Med J Australia 9 2, 12, 45
Epidemic encephalitis from the standpoint of the
ophthalmologist G F. LEBBY Am J Ophth 9
785
The examination of the eye by direct sunlight E. JACK
Nov J Am M Ass 92 1917, 6
Extraordinary development of the tactile and olfactory
senses compensatory for loss of sight and hearing with
demonstration of the remarkable case of Willetta Higgins
T. J. WILLIAMS J Am M Ass 92 1917, 33
Microscopic study of the living eye E. ARONOWITZ
Rev Assoc med argent 9 22, 385
Accident eye injuries case report S. G. DARNER
Kentucky M J 922 17, 69
Injuries of the visual tracts of the brain H. WIEDE
MANN Ztschr f ophth u. Verwundungsw 9 437
[125]
A case of pulsating exophthalmos R. A. FRUTO Am
J Ophth 9 2, 803
The fate of an intra-ocular foreign body H. S. GRADLE
Mil Surgeon, 923 14, 4
The treatment of concomitant squint with especial re
ference to training of the foveal sense H. M. LANGOOD
Pennsylvania M J 922 1917, 7
The present-day status of squint surgery new opera
tive technique O. WILKINSON J Am M Ass 9 2,
1917, 14 7 [125]
Symmetrical swellings in the neighborhood of the upper
lid near the outer canthus of each eye P. G. DODD
Proc Roy Soc Med Lond 9 25 Sect Ophth 33
Trachoma and our end results J. H. BULLOCK Am J
Ophth 9 2, 3 709
Report of trachoma clinic conducted at Pelham
Mitchell County Georgia J. McMillan J Med Ass
Georgia 9 21 498
The changes in the para ocular glands which follow the
administration of diets low in fat soluble A with notes of
the effect of the same diets on the salivary glands and the
mucosa of the larynx and trachea S. MONT Bull Johns
Hopkins Hosp 922 1917, 157
Dacryocystitis etiology pathology treatment, medical
and surgical C. S. MEADE Ohio State M J 922, 1917,
63
The importance of careful study of the etiology in
inflammatory conditions of the eye W. H. CARANIK
J Med Ass Georgia 922 21 400
The pros and cons of foreign protein injections in affec
tions of the eye J. M. PATTON J Iowa State M Soc
922, 22 387
Vernal conjunctivitis B. H. MINCHES J Med Ass
Georgia, 922 21, 407
Points in the diagnosis of syphilis of the eye L. H.
LAWSON Med Herald 922 21, 283
Sympathetic ophthalmitis D. F. HARRINGTON Am J
Ophth 922, 79
A case of echinococcal infection of the eyeball J. S.
EVANS Indian M Gaz 922 1 12, 376

- Intra ocular cysticercus D. J. WOOD Brit J Ophth
9 2, 459 [126]
Bilateral blood staining of the cornea H. S. GRADLE
Illness M J 922 21, 28
Onyx of long duration D. J. WOOD Brit J Ophth
9 2, 458 [126]
The early development of the corneal tubercle, study
in slit lamp microscopy B. T. HANSEN and F. H.
HANSEN Arch Ophth 922 2, 53 [126]
Neuropathic keratitis the result of focal infection J. W.
CHARLES Am J Ophth 922, 703 [127]
Changes in refraction H. FRIEDENWALD Am J
Ophth 9 2, 802
Minnis cylinders in refraction J. D. HESTON J Am M
Ass 922 1917, 475
Embryonic fibrovascular sheath of the crystalline lens
E. J. LEE and M. B. LYON Am J Ophth 9 2, 7
706 [127]
A case of cataracts electra examined with Gallstrand
slit lamp H. G. A. GJESING Brit J Ophth 9 2, 74
447
Tonometry H. G. A. GJESING Brit J Ophth 9 2,
74, 45
A mass partly obscuring the optic disk J. F. CONNOR
Proc Roy Soc Med Lond 9 25 Sect Ophth
33
The blind spot H. S. GRADLE J Michigan State M
Soc 922, 20, 435
Central scotomas with pyorrhea A. G. HOVD Am J
Ophth 9 2, 804
How to know the blood pressure in the vessels of the
retina A. P. MAURITZ Am J Ophth 922 777
Central retinitis with recovery of normal vision W. H.
LUNDGREN and J. T. HARRIST J Am M Ass 922 1917,
141
Retinal detachment at the macula H. R. JENNERY Proc
Roy Soc Med Lond 922, 25 Sect Ophth 34
Glaucoma, its etiology and treatment F. J. MCCARTY
Rhode Island M J 922, 203 [127]
Some interesting eye cases S. K. GANDEVY Indian
M Gaz 9 2, 1917, 380

Ear

- The correction of prominent ears E. ERNER Med
Klin 9 2, 1917, 7 [127]
The ear, nose and throat man and the dentist W. T.
PARSON Dental Cosmos, 9 2, 1917, 974
Surgical disbarment applied to otology SAMUEL
Sennels med 922, 1917, 46
Etiology in relation to the deaf E. AUGERIN Nation
Health, 922 19 575
The mechanism of hearing W. M. BRYAN Brit M J
9 2, 785
Deaf ears in children H. HAYS Med Times, 19 2, 1,
268
Significant results obtained in treating catarrhal deaf
ness P. V. WILKINSON N York M J & Med Rec 9
2, 466
Report of two cases of head injury with abnormal
otoneurological findings M. J. GORTLIER Laryngoscope
922 1917, 785
Ear, nose, and throat complications of influenza G. S.
HART Practitioner, 922, 202
The treatment of otitis media in adults W. STUART LOW
Practitioner 9 2, 202, 200

The prevention of ethics needs and standards in acute
care and infection M P Boynton New Orleans LA
4-6-1 1-1-1991 91

The use of radium for light—in the treatment of skin
media H J GRANT M.D. and C T J DODGE Am
J Dis Child 9 1917 320

The control was through the nasal (ophthalmic or block 1a) ganglion G 31009 South NJ 9
Ref.

In laboratory conditions of the mastoid process and the middle ear A 4 boys J Lancet 9 26, 6
Streptococcus hemolyt. macular 1 31 14 x 2
Laryngoscope 9 23 4, 7 3

The importance of certain maxillofacial and lateral neck infections is often minimized for convenient general infection J. N. JEFFERY, J. South Carolina M. 44: 19, 1954, 300.

The report of case of rapid severe thrombotic cerebral
the acute encephalitis. A review on involvement of the
torcular region J R Pac Virginia M Month 29 2, 1968,
19

* A case of liveritis after mastoidectomy spreading from
bursa. J. St. Louis M.D. Soc. Med. Press 1914. 100

SURGERY OF THE NOSE, THROAT AND MOUTH

Abstract

The basal metabolism is hypermetabolic (100% increased) during anaphylaxis, and cases in which the respiratory arrest has been applied to the world. W. L. Brown, Laryngoscope, 1960, 70, 1000.

The male bird is R II Country Kentucky M
J O R, IV, 66

A case of upper live ethereal, capable to be actual
cellular, and is consistent to document. 11

Intercom. of)
 Kentucky M J)
 Intercom. of)
 Kentucky M J)
 Intercom. of)
 Kentucky M J)

19 The control of pinworms through the nasal (epin-
20

The cell of interest in the GSN is the

The control of muscle tone roughly it mean
(of) regulation of muscle tone it the South

David L.

The undersigned of personally interviewed J. H. I. to
True & to J. H. I. and you
The date of the original production in U. S. management

of the period. M. A. R. 2. From 1212 J. VI
2121, J.

The question of herniotomy is early bilateral (f)

The contract file was forwarded to the FBI on 11/11/68. The FBI is currently reviewing the file. The FBI is currently reviewing the file. The FBI is currently reviewing the file.

The control of Government is essential to the maintenance of the public health and safety.

1941 The N. S. Treatment of Louis and Ernest
1941 Texas M. J. 9 11 10

The after treatment of operations on the throat, nose
and ear A B LIT Am J Surg 2, XXXVI, 6
Tuberculosis laryngitis D K Smithy J M Jones

The early diagnosis of cancer of the larynx. M. F. Swartz (Columbia, S. C.).

The surgical treatment of laryngeal cancer with an analysis of seventy cases. J. J. Mackenty. N. York Med. J. 31, 1946, 456.

Month

Verdict

National and Internal accession numbers: B. Tract 1
 Internal Catalogue: 9. 10. of 9
 Date of (c) 1941. 1941. 1941. Internal Catalogue: 9

14b. or)
The differentiation of congenital folds of the lip and
nostril with suggestions for recording these cases. 15

1. *vis* and 11 *P. harrisi* 1 *Am. M. M.* 9 2, *harrisi*
3
[colorable *harrisi*] 11 11 *harrisi* and 1 1 *harrisi*

4. Typical operators on the parameters for local constraint conditions: $L, L', M, M', N, N', P, P', Q, Q', R, R', S, S', T, T', U, U', V, V', W, W', X, X', Y, Y', Z, Z', \dots$

4-4. TV ad to market various brands of the month and also to the same pathok processes. M. A. PERRY

J Am M Ass 1977; 235: 1077
The treatment of trench mouth T I HANCOCK
Dental Council

W. A. Conwell (Dr. M.) 42 W. 40th St.
Congenital dental arch. I II III (arrow bett.)

9. Ives 73
(How re reflect by way of teeth marks, and suggest
especially for scrapers R B 46 ET (abnormal late)

(A summary of the conference is attached to the diagram) and I read
 around the Hall.

124
 Jan. 2nd of his arrival in attendance of the notary
 library placed under the supervision of his colleague

1998

MARCH, 1973

International Abstract of Surgery

Supplementary to
Surgery, Gynecology and Obstetrics

EDITORS

FRANKLIN H. MARTIN Chicago
SIR BERKELEY MOYNIHAN K.C.M.G. C.B. Leeds
PAUL LECENE, Paris

SUMNER L. KOCH, Abstract Editor

DEPARTMENT EDITORS

DEAN D. LEWIS, General Surgery	ADOLPH HARTUNG Roentgenology
CHARLES B. REED, Gynecology and Obstetrics	JAMES P. FITZGERALD, Surgery of the Eye
LOUIS E. SCHMIDT, Genito Urinary Surgery	FRANK J. NOVAK, J. Surgery of the Ear
JOHN L. PORTER, Orthopedic Surgery	Nose and Throat

CONTENTS

I	Index of Abstracts of Current Literature	hi
II	Authors	vn
III	Collective Review	145 161
IV	Abstracts of Current Literature	162 201
V	Bibliography of Current Literature	202 216

Editorial communications should be sent to Franklin H. Martin, Editor 30 N. Michigan Ave. Chicago
Editorial and Business Offices 30 N. Michigan Ave. Chicago, Illinois, U. S. A.
Publishers for Great Britain Halcrow, Tindall & Cox, 8 Henrietta St. Covent Garden, London, W. C.

CONTENTS—MARCH, 1923

COLLECTIVE REVIEW

EMPTIMA J S Schickel, M.D. Chicago

145

ABSTRACTS OF CURRENT LITERATURE

GENERAL SURGERY

SURGICAL TECHNIQUE

Operative Surgery and Technique

- CULLIN, T. S. The Use of Sutures as Tractors in the Vaginal Operation for Prolapse 86
- NEALLEY A. J. Restoration of the Round Ligaments in Retroversion of the Uterus 86
- CHODURA, A. The Transplantation of Free Muscle into the Nephrotomy Wound 94
- YOCUM, H. H. The Operative Cure of Incontinence of Urine with Illustrative Cases 96
- FRANCOIS, P. The Operative Treatment of Incontinence of the Urinary Bladder 96
- JONES, G. L. A New Method of Removing the Lens in Its Capsule 96

Anesthesia

- DRIVER, L. Conduction Anesthesia in the Leg 6
- KOENIG, F. Experiences in 600 Cases of Local and Conduction Anesthesia 6
- JORDAN, T. A New Technique for General Spinal Anesthesia 16
- SCHOLL, A. J. Further Experiences in Sacral Anesthesia in Urology 163
- WIDENOR, S. and DANIELSSON, S. The Dangers of Lumbar Anesthesia 63

SURGERY OF THE HEAD AND NECK

Head

- ZIMMERMAN, A. Malignant Tumor of the Temporal Bone 63
- SCHUB, B. Skull Flap Decompression for Choked Disk? 64
- GORDON, A. Unusual Faculty of Symptoms in Some Cases of Pilocytic Astrocytoma 64
- DELUZE, J. K. M. A Contribution to the Study of Brain Abscess 64
- NEV, G. B. The Delayed Pedicle Flip in Plastic Surgery of the Face and Neck 165
- GORTLER, M. J. The Indications for the Radical Maxillary Operation 90

Neck

- DONE, J. Clinical Experiences in Laryngeal Operations for Goiter with Special Consideration of Recurrent Goiters and Operations for Recurrence 65
- KLOPFER, H. and HELLWIG, A. Recurrence of Goiter 166
- OKADA, W. The Treatment and Prognosis of Carcinoma of the Larynx 66

SURGERY OF THE CHEST

Chest Wall and Breast

- HALE, J. B. Bleeding Breasts, with Few Cancer Statistics from the Druggists Hospital 66
- LEE, B. J. The Treatment of Recurrent Inoperable Carcinoma of the Breast by Radium and the Roentgen Ray 67
- SITTENFIELD, M. J. Does Radiation Enhance Post-operative Recurrence of Carcinoma of the Breast? 67

Trachea and Lungs

- SERRA, G. Tracheocele Complicated by an Effusion of Blood 68
- HEDBLUM, C. A. Graded Thoracoplasty in Chronic Pulmonary Suppuration, with Special Reference to Diffuse Bronchiectases 68
- SUTTON, G. E. Pulmonary Fat Embolism 68
- TELLER, A. F. and BLACKMAN, J. R. The Effect of Heavy Radiation on the Pleura and Lungs 69
- COLLINS, C. U. Surgery of the Lung 69

Pharynx and Esophagus

- BROWN, T. A. T. Cases of Symptomatic Perforation of the Esophagus Revealed by Scopes in the Lungs 69

SURGERY OF THE ABDOMEN

Abdominal Wall and Peritoneum

- COTTE, R. The Anatomy and Surgical Bearing of the Nerves Found in the Abdominal Wall 170
- WERNER, R. R. Radical Operation for Femoral Hernia with the Aid of Active Muscular Closure 70

III

- HELLER-BAILEY, H. The Radical Operation for Inguinal and Femoral Hernia with Plastic Use of the Uterus through the Abdominal Cavity and Simultaneous Laparotomy for Another Condition 7
- SOOTHILL, H. S. The Operative Treatment of Difficult Hernia 71
- DEWEER, B. S. The Diagnosis of Peritonitis and Peritoneal Transudates by Means of Abdominal Paracentesis with Capillary Tube 71
- REDFER, The Surgical Treatment of Peritonitis 71
- Gastro-Intestinal Tract**
- MOYER, G. O. Gangrenous Perforation of the Stomach, Complication of Duodenogastric Hernia 71
- HALBERTSMA, J. J. A Fibroma of the Wall of the Stomach Adherent to an Uterus on the Lesser Curvature 71
- DELORE, X. and DUNST, C. Repeated Interventions in Gastric Carcinoma 71
- CROUCH, O. The Importance of Anacardium in Surgical Practice 71
- LAKE, W. A. On the Treatment of Non-Malignant Affections of the Colon 71
- LOCKART-MUMFORD, J. P. The Treatment of Acute Obstruction from Cancer of the Colon 71
- FAMLEY, W. A. A Scalping Operation for Abscesses Above the Rectum 71
- PREVOSTON, J. R. Carcinoma of the Rectum and Pelvic Colon Age and Sex Incidence and Porphyrins 71
- Liver, Gall-Bladder, Pancreas, and Spleen**
- BONFILL, L. Cholecystitis Cystica 71
- MORROW, R. The Diagnosis and Treatment of Cholelithiasis 71
- WILLIAMS, C. The Technique of Exposing the Biliary Passages 71
- SURGERY OF THE EXTREMITIES**
- Conditions of the Bones, Joints, Muscles, Tendons, Etc.
- MELCHIOR, E. A Peculiar Form of Tumor Like Osteomyelitis 71
- BAKER, C. F. Report of an Unusual Foreign Body in the Arm 71
- Fractures and Dislocations**
- BLANCHARD. The Trans-Olecranon Route for the Reduction of Old Dislocations of the Elbow 71
- ANDREWS, G. Necrosis of the Proximal Fragment in Fracture of the Neck of the Femur and Its Importance with Regard to the Hip Joint 71
- BON, R. The Operative Treatment of Subcapital Fractures of the Neck of the Femur 71
- Surgery of the Bones, Joints, Muscles, Tendons, Etc.
- SECHTER, R. Paralysis of the Shoulder Girdle 177
- ORILL, S. A Prosthesis for the Thumb 77
- SURGERY OF SPINAL COLUMN AND CORD**
- CARRIE, J. A Case of Backward Location of the Seventh Cervical Vertebra with Isolated Compression of Nerve Roots 77
- FRANK, C. H. and SETTLER, W. G. An Assay of Fourteen Consecutive Cases of Spinal Cord Tumor 77
- ELIAS, C. A. and STROCK, B. The Mechanical Effects of Tumors of the Spinal Cord Their Influence in Symptomatology and Diagnosis 79
- SURGERY OF THE NERVOUS SYSTEM**
- ROCHONNOT, G. The Employment of Electrical Methods in the Diagnosis and Prognosis of Paralysis Due to Lesions of the Peripheral Nerves 80
- STROCK, J. S. B. Resection of Peripheral Nerves 81
- MISCELLANEOUS**
- Clinical Notes—General Physiological Conditions
- HODGINS, R. R. Pre-Carcinoma Conditions of the Cervix Uteri 86
- HODGINS, R. Cystic Kidney 86
- TEAL, M. J. L. The Pathology and Mechanism of Prostatic Hypertrophy 97
- Blood and Lymph Vessels
- DEGAND, L. The Embryogenesis, Pathologic Anatomy, Pathophysiology and Surgical Treatment of True Aneurysms 93
- SECHTER, S. A New Method for the Treatment of Thrombo-Angitis Obliterans 93
- Radiotherapy and Radiant Therapy
- HODGINS, F. C. A New Method of Simultaneous Stereoscopic Observation of Both Vastocles 90
- Industrial Surgery**
- COVE, H. R. The Acute Fatal Back Among Industrial Employers Allowing Compensation 183
- Legal Medicine**
- Malpractice in the Treatment of Fracture 84
- Payment of Surgeon Halstead Because of Alleged Malpractice 84
- Suit for Damages for Alleged Failure to Remove Placenta 84
- Suit for Damages for Alleged Leaving of Gauge in Wound 85

GYNECOLOGY

Uterus

- CULLER, T. S. The Use of Sutures as Tractors in the Vaginal Operation for Prolapsus 86
- NATALITY, A. J. Restoration of the Round Ligaments in Retroversion of the Uterus 86
- HOOVER, R. R. Pre-Cancerous Conditions of the Cervix Uteri 86

Adnexal and Peri-Uterine Conditions

- SAMPSON, J. A. The Lid History of Ovarian Hematocystoma (Hemorrhagic Cyst) of Endometrial (Vielhienia) Type 86
- HOOD, M. R. Solid Carcinoma of the Ovary 88

OBSTETRICS

Pregnancy and Its Complications

- NORRIS, C. C. and MURPHY, D. P. Pregnancy in the Tuberculous with the Report of 56 Cases 89
- BLAKE, E. M. Bilateral Detachment of the Retina in Nephrosis of Pregnancy. Reattachment of the Retina 201

Puerperium and Its Complications

- PIPER, E. B. The Treatment of Puerperal Sepsis by the Use of Microcrystine Intravenously With Report of Animal Experimentation in the Chemical Destruction of the Blood 90
- BRUKY, H. The Surgical Treatment of Puerperal Gas Bacillus Infection of the Uterus. Physiotherapy 9

Labor and Its Complications

- HARRIS, C. C., and RUCKER, M. P. The Action of Ergot and Solution of Hypophysis on the Uterus 89
- KORDEK, G. W. Late Uterine Rupture of Velamentous Umbilical Cord 90

New-Born

- JOYCE, C. Patent Foramen Ovale 9

GENITO-URINARY SURGERY

Adrenal, Kidney and Ureter

- KELLER, O. Traumatic Subcapsular Rupture of the Kidney 9
- LOOKER, H. The Surgery of Horseshoe Kidney 9
- WOSZILO, E. Cystic Kidney 93
- DEBRYNE LAPOINTE, R. The Histologic Lesions of Experimental Acute Hydrophrosis 93
- BLUM, V. The Diagnosis of Small Concretions in the Renal Pelvis and Ureter 94
- CHERNATA, A. The Transplantation of Free Muscle into the Nephrotomy Wound 94
- HUTNER, G. L. Ureteral Stricture: An Important Etiological Factor in the So-Called Essential Hematuria 94
- GIORDANO, A. S. and BOWLES, H. C. J. Carcinoma in the Ureteropelvic Junction: Metastatic from the Prostate: Report of Case 95

Bladder, Urethra, and Penis

- YOUNG, H. H. The Operative Care of Incontinence of Urine, with Illustrative Cases 96
- FRANGENHEIM, P. The Operative Treatment of Incontinence of the Urinary Bladder 96

Genital Organs

- SCHWARTZ, A. H. and CAMER, J. Streptothrix Prostatitis 96
- TEVENS, W. J. L. The Pathology and Mechanism of Prostatic Hypertrophy 97
- HARRIS, S. H. Prostatectomy: A Review of Recent Series of 146 Cases with Five Deaths 97
- WARD, R. O. Cysts of the Epididymus 98

Miscellaneous

- SCHOLL, A. J. JR. Further Experiences in Sacral Anesthesia in Urology 98

SURGERY OF THE EYE AND EAR

Eye

- BRUCE, S. A. The Relation of Orbital Affections to Nasal Conditions 99
- SCHWARTZ, W. T. Some Observations on Orbital Growth: Reports of Three Cases 99
- GAYROUD, S. R. Ocular Sporotrichosis 200

Nasal

- NEARY, H. Ocular Surgery with Wide Extension Involving the Brain and Spinal Cord 200
- WOODS, A. C. and KLAFF, A. The Therapeutic Use of Uveal Pigment in Sympathetic Ophthalmia 200
- JACK, C. M. Focal Infection in the Tarsal Channing T. berious Ophthalmia 200

VINCENT, F. H. and FARRER, A. S. Injury of the Cornea and Conjunctiva Due to Fish Bite	201	EAR	
JENNISON, G. L. A New Method of Removing the Lens in Its Capsule	20	HONGER, P. C. A New Method of Simultaneous Stereoscopic Observation of Both Mastoids	20
BLAIR, I. M. Bilateral Detachment of the Retina in Nephritis of Pregnancy. Reattachment of the Retina	20	GOTTI, A. M. J. The Indications for the Radical Mastoid Operation	202

SURGERY OF THE NOSE THROAT AND MOUTH

NOSE		THROAT	
BROWN, S. A. The Relation of Orbital Affections Due to Nasal Conditions	199	OKADA, W. The Treatment and Progress of Carcinoma of the Larynx	60
		JACK, C. M. Focal Infection in the Tonsil Causing T. berrucosus Ophthalmia	200

BIBLIOGRAPHY

GENERAL SURGERY

SURGICAL TECHNIQUE		Blood	208
Operative Surgery and Technique	20	Blood and Lymph Vessels	210
Anesthetics	20	Surgical Diagnosis, Pathology, and Therapeutics	210
SURGERY OF THE HEAD AND NECK		Radiology and Radium Therapy	21
Head	201	Industrial Surgery	10
Neck	203	Hospital Medical Education and History	212
		Legal Medicine	212
SURGERY OF THE CHEST		GYNECOLOGY	
Chest Wall and Breast	203	Uterus	
Trachea and Lungs	203	Adrenal and Peri Uterine Conditions	21
Heart and Vascular System	204	Internal Genitalia	
Pharynx and Esophagus	204	Miscellaneous	
SURGERY OF THE ABDOMEN		OBSTETRICS	
Abdominal Wall and Peritoneum	204	Pregnancy and Its Complications	21
Gastro-Intestinal Tract	204	Labor and Its Complications	21
Liver Gall Bladder Pancreas, and Spleen	206	Puerperium and Its Complications	
Miscellaneous	206	Newborn	3
		Miscellaneous	213
SURGERY OF THE EXTREMITIES		GENITO-URINARY SURGERY	
Conditions of the Bones, Joints, Muscles, Tendons, Ligaments	207	Adrenal, Kidney and Ureter	1
Fractures and Dislocations	207	Bladder, Urethra, and Penis	214
Surgery of the Bones, Joints, Muscles, Tendons, Ligaments	208	Genital Organs	214
		Miscellaneous	14
SURGERY OF THE SPINAL COLUMN AND CORD	208	SURGERY OF THE EYE AND EAR	
SURGERY OF THE NERVOUS SYSTEM	209	Eye	215
		Ear	215
MISCELLANEOUS		SURGERY OF THE NOSE, THROAT AND MOUTH	
Chemical Diseases—General Physiological Conditions	209	Nose	216
		Throat	216
		Mouth	216

AUTHORS

OF THE ORIGINAL CONTRIBUTIONS WHICH ARE ABSTRACTED IN THIS NUMBER

- | | | | |
|------------------------|---------------------|-------------------------|--------------------|
| Arbussen, G 76 | Dickie J K M 164 | Johanson, G L 20 | Sachs, B 64 |
| Baker C F 73 | Drusner L 6 | Jonacaco, T 6 | Sampson, J A 86 |
| Blackman, J R 169 | Duby, J 165 | Joyce C 9 | Schochet, S S 145 |
| Blake, E M 20 | Duot, C 7 | Keller O 92 | Scholl, A J J 83 |
| Blanchard, 76 | Eggers, H 92 | Klose, H 66 | Schwartz, A H 96 |
| Bham, V 94 | Elberg, C A 79 | Knapp, A 200 | Serra, G 68 |
| Bodnar, L 74 | Fansler W A 74 | Koenig, I 62 | Shoemaker W T 99 |
| Bons, R 76 | Franzenberg, P 96 | Kosmak, O W 90 | Silbert, S 83 |
| Bourquignon, G 80 | Frazer C H 77 | Lane, W A 73 | Sittenfeld, M J 67 |
| Brown, T A 69 | Friedenwald, J S 20 | Lee, B J 167 | Smeesters, E 77 |
| Broett, H 9 | Gafford, S R 200 | Lockhart Mummery J P 73 | Souttar, H S 71 |
| Brunson, S A 99 | Gordano, A S 95 | Meacham E 75 | Spiller W G 77 |
| Burrows H C J 95 | Gordon, A 64 | Moeppert, G G 7 | Stockey, B 79 |
| Cabot, J 77 | Gottlieb M J 20 | Morison R 73 | Stopford, J S H 81 |
| Casoli, J 96 | Hald, J K 66 | Murphy, D P 89 | Setton, G E 158 |
| Cagnoni, O 72 | Harris S H 97 | Neume, H 200 | Tennbaum, J L 97 |
| Carmata A 94 | Haskett, C C 80 | New G B 65 | Tyler A F 69 |
| Collins, C U 69 | Hedblom, C A 68 | Norm, C C 89 | Verhooff, F H 20 |
| Cone, H R 83 | Hefkethall, H 7 | Nyvalsky A J 86 | Ward, R O 98 |
| Coyte, R 70 | Hell, W A 66 | Olade, W 66 | Wideros, S 63 |
| Collen, T S 86 | Hodges, P C 20 | Oswill, S 77 | Williams, C 75 |
| Dahlstrom, S 61 | Hoos, M R 88 | Pennington, J R 74 | Woods, A C 200 |
| DeBernac-Lagarde, R 93 | Hosoya, R K 86 | Paper L B 90 | Wosadlo, E 92 |
| DeGuzman, L 83 | Hunter G L 94 | Rieschle 7 | Wreden, R R 70 |
| Delore, K 7 | Jack, C M 200 | Rucker M P 89 | Young, H H 296 |
| Denner B S 7 | | | Zebrowski, A 163 |

INTERNATIONAL ABSTRACT OF SURGERY

MARCH, 1923

COLLECTIVE REVIEW

EMPHYEMA¹

By S. S. SCHOCHET, M.D. CHICAGO
Formerly Chief of Empyema Service No. 4, General Hospital, U. S. Army

INTRODUCTION

THIS collective review is not an attempt to solve the problem of empyema but discusses some of the numerous views. Neither can it be claimed to offer anything new in reference to the etiology, pathology or treatment. Its chief object is to present as impartially as possible the data advanced by certain writers. Men of great ability as surgeons and internists differ widely regarding this condition and especially with regard to its treatment. This is especially true of those who have made reports during the past five years, possibly because an unusually large number of empyema cases followed the recent epidemics of measles, influenza, and various types of pneumonia.

A study of their papers reveals the fact that a great number of writers are not familiar with the history of the treatment of empyema. This is evident from what they regard as new discoveries and new methods of treatment.

As stated in an editorial () A knowledge of medical history is a most distressing thing for it discloses persistently that this or the other new discovery is only a rediscovery. We must take our consolation in the fact that generally the first steps were but halting ones, not being backed by sufficient force of actual knowledge to permit them to reach their goal, and hence our newer progress on a more substantial basis is, after all, the only worthwhile advance.

In abundant material it is not unusual to discover apparently new diseases, new symptoms, or new relationships between diseases and symp-

tems, and apparently new methods of treatment. Moreover, findings which in isolated cases do not seem striking assume added importance when seen in numerous cases in a brief period of time.

HISTORY

In order that the reader may have a clearer conception of the evolution of the modern methods of treatment, a brief résumé of the history of the treatment of empyema seems warranted even at the risk of repeating facts known to many.

The term empyema (*em*=within and *pus*=pus) appears to have been used by the ancients to designate an internal collection of pus in the pleural cavity, the lung substance (abscess) or the cavities of ulcerative tuberculosis. Aetius () is believed to have been the first to restrict the term to pleural collections.

The first description of the symptoms and nature of empyema is generally credited to the great master Hippocrates, who made frequent mention of the condition in his writings (4). It is fully described also in the books of the Hippocratic school (5) but there is some doubt as to whether these were the product of his pen. It appears that Hippocrates gained his knowledge of empyema and other diseases from his ancestors, the Asclepiades, who presided over the temples of health in Greece and are the accredited authors of the first book of Prognostics and the *Coun Prognostics* which together according to Adams (4) and other authorities, formed the basis of the Prognostics of Hippocrates and contained an excellent account of the means of recognizing

¹Approved for publication, office of the Surgeon General.

this disease one of the oldest known to medicine (5). There is no doubt that Hippocrates was familiar with both forms of pus collections in the thoracic cavity—tuberculous cavitations and empyema—as we know them today. This is evident from Paragraph 27 of the translation of the *Prognostics* given by Adams.

"Empyema may be recognized in all cases by the following symptoms. In the first place the fever does not go off, but is slight during the day and increases at night, and copious sweats supervene; there is a desire to cough and the patient expectorates nothing worth mentioning; the eyes become hollow; cheeks have red spots on them; the nails on the hands are bent; the fingers are hot, especially their extremities; there are swellings in the feet; they have no desire for food and small blisters (phlyctenae) occur over the body. These symptoms attend chronic empyemata and may be much trusted to; and such as are of short standing are indicated by the same; provided they be accompanied by these signs which occur at the commencement, and if at the same time the patient had some difficulty of breathing. Whether they will break earlier or later may be determined by these symptoms—if there be pain at the commencement and if dyspnoea, cough and ptyalism be severe the rupture may be expected in the course of twenty days or still earlier; you may expect from these the rupture to be later; but the pain, dyspnoea and ptyalism must take place before the rupture of the abscess. The patients recover most readily whom the fever leaves the same day that the abscess bursts; when the abscess discharges are small and consistent, the matter quite smooth uniform in color and free from phlegm. They die whom the fever does not leave or when appearing to leave them, it returns with exacerbations; when they have thirst, but no desire for food; and then are watery discharges from the bowels; when the expectorations are green or lilac or putridous and frothy. If these occur they die."

It is evident from this very clear clinical picture that rupture of an abscess into the bronchus (1) indicated instead of rupture through the external chest wall. A similar effect is produced by artificial pneumothorax (6), a procedure first practiced over twenty-three hundred years ago.

Hippocrates was familiar also with surgical procedures and called attention to the dangers of too early operation and too speedy evacuation of the pleural contents (7). With regard to pre-operative measures he stated that the patient should be prepared fifteen days after the onset of the disease by washing him very thoroughly

with warm water. This recognition of the importance of cleanliness suggests the dawn of aseptic principles (8).

With regard to the use of the knife it is stated in one book of the *De Morbis* (5) that before the incision was made the skin was marked. Elsewhere it is stated merely that an incision was made in the skin between the ribs with a sword-like knife (*μαχαίρην* or *μαχαιρί*) the subjacent parts being then perforated with a pointed knife (*φρένα ἀξιδελφῆ μαχαίρην*) guarded by a piece of rag so wound around it that only a portion of its length the size of the thumb nail was exposed. When the pus was reached some of it was allowed to escape, the incision being then plugged with a stiff linen tent fixed to a thread. The tent was removed twice daily for a period of ten days for gradual evacuation of the fluid; and at the end of this time the cavity was allowed to empty itself. In order that the lung which had become accustomed to the presence of fluids might not dry too quickly warm wine and oil were injected through the fistula (9).

Therefore from these old masters we learn of the great danger of too early operation and too rapid evacuation of fluids from the pleural cavity. They tell us also how to prevent the loss of tents and drainage tubes in the pleural cavity by means of a linen thread, and instruct us regarding the use of oils and anti-septics in the treatment of infection. Their method of draining through the rib in order that they might have a rigid structure to cork and uncork was re-discovered by a later writer.

The teaching of the School of Cos was in vogue during the next five or six centuries. Celsus (10) mentioned empyema as a complication of fracture of the ribs. During the sixth and seventh centuries operative procedures lost (1) or on account of poor results. Instead of the knife, a canter was used—a method employed by the Arabians (11).

From this period to the sixteenth century few writers advocated operative measures, and those who opened the chest followed the directions of Hippocrates. In 1559 Pare (12) treated empyema by intercostal incision and resection of ribs. He warned of the danger of incising the vessels near the ribs and advocated drainage of small amounts at intervals.

Early in the seventeenth century Horstius advocated early closure of chest wounds in opposition to the time honored custom of keeping the fistula opened. The subsequent use of the trocar may also be traced to the practice of the seventeenth century.

De la Motte (13) in 1772 and Hester in 1748 advocated incision and gave up the injection of fluids into the chest cavity, which they concluded was a harmful procedure. Bass (14) was the first to suggest that air should be excluded by means of a valvular opening which would close the orifice after the fluid had escaped. In 1810 Morand (15) suggested that the effusion be aspirated once or twice at intervals of a week before the chest cavity was opened. Thus it is not surprising that when Sedillot attempted to popularize the surgical procedure, Dupuytren (16) the greatest surgeon of his time, declined operation when he himself was suffering from empyema, uttering the classical statement that he would rather die by the hands of God than by those of the doctors. The great Velpeau had lost practically all of his cases of empyema, and Dupuytren had seen only four recoveries in fifty cases. Most of the latter however were treated by aspiration.

In 1809 Laennec published his epoch-making work on auscultation which made the diagnosis of empyema easier. Williams (17) recommended repeated tapping and the displacement of the pus with water injected through a double-tube cannula. If the pus did not disappear he employed nitrate of silver and sodium chloride solution, a procedure rediscovered by Diederich (18).

In later years chlorinated solutions were employed. Trouseau (19) favored particularly the injection of iodine but used chlorinated solutions also.

This brings us to the more modern and refined methods of treatment. It is clearly evident, however, that the numerous new procedures advocated in the epidemic of the Great War are very similar to those employed in the past, especially the late operation advocated by the great master Hippocrates more than twenty three centuries ago.

ANATOMY AND PHYSIOLOGY

While it may seem elementary to review certain anatomical and physiological considerations with regard to the thorax, this basic knowledge is necessary for a correct understanding of the pathology, diagnosis, and treatment of empyema. Green (20) believes that apparent disregard or misunderstanding of the true physiology and pathology of the condition was responsible for the high mortality of 84 per cent in one army camp and an average mortality of 33.2 per cent in all army camps (21).

In the following discussion the anatomy and physiology of the chest will not be described in detail, but mention will be made of the salient points having a direct bearing on empyema.

The lymphatics of the thoracic wall consist of three main groups:

1. A superficial group to the muscles and skin most of which terminate in the axillary nodes.

2. The intercostal lymphatic vessels which drain the intercostal muscles and pleura. Those draining the external intercostal muscles run back, and after receiving the vessels which accompany the posterior branches of the intercostal arteries, terminate in the posterior intercostal nodes. Those of the internal intercostal muscles and parietal pleura consist of a single trunk in each space. These trunks run forward in the subpleural tissue, and the upper six open separately into the internal mammary nodes or into the vessels which terminate in the lowest of the internal mammary nodes (22). There are few lymphatics beneath the ribs. Stomata are found over the intercostal spaces, but not over the ribs. Lymph vessels are also numerous over the intercostal spaces (23).

3. The lymphatics of the diaphragm. These form two rich plexuses, one on the thoracic surface of the diaphragm and the other on its abdominal surface.

The anatomical relationship of the lymphatics of the chest wall explains the extension of infective processes with the formation of abscesses which have been found so frequently beneath the sternum (24) and the posterior portions of the chest wall. A point of great importance is that in resection of a rib we pass through an area with practically no lymphatics, while in thoracotomy the possibility of infecting distant parts through the lymphatic streams is greater.

The lymphatics of the lung may be subdivided into two plexuses, a superficial plexus situated beneath the pleura, and a deep plexus which accompanies the branches of the pulmonary vessels and the ramifications of the bronchi. There is little or no anastomosis between the superficial and deep lymphatics of the lung except in the region of the hilus. Miller (25) describes collections of lymphoid tissue situated beneath the pleura.

The pleura, like other serous surfaces, do not have sensory nerves. Therefore contrary to the general impression, the pain or stitch of pleurisy is not due to the rubbing of the surfaces but is a referred pain caused, according to McKenzie (26) by spasm of the intercostal muscles.

Under normal conditions the intrapulmonary pressure expands the lungs until they fill that part of the thoracic cavity not occupied by other organs. As the chest cavity varies with respira-

tion the volume of the lungs must change accordingly in order that at all times the lungs will fill fully every part of the chest cavity. The expansion of the lungs is not uniform, however, since different parts of these structures are not equally extensible. The root of the lung containing the bronchus, vessels, and fibrous tissue offers the greatest resistance to an expanding force while the bronchial and vascular ramifications radiating toward the surface with pulmonary tissue between them are more extensible and the outer 25 or 30 millimeters of peripheral lung tissue has the greatest extensibility. The expansion of the lung is accomplished by separation of the less extensible rays of tissue which permits the expansion of the more extensible pulmonary tissue between them (Keith, 27). It must be remembered also that the expansion of the lung does not take place instantaneously and equally throughout. If the chest wall or the lung is perforated so that air can communicate with the pleural cavity from without or from the bronchial tree the lungs promptly shrink in size since the atmospheric pressures on the outside and in the inside of the sac are then equalized.

In addition to this purely mechanical action other factors must come into play in the collapse of the lung. Rees and Hughes (28) and many other observers have noted partial and massive collapse of the lung structure. Pasteur (29) was the first to attribute this to the reflex inhibition of the diaphragm which he had observed following an abdominal operation in which the diaphragm was not injured.

The intrapleural pressure is subatmospheric, being -5 millimeters during rest and -10 millimeters during inspiration.

BACTERIOLOGY

Perhaps no subject in the entire realm of medicine has been given greater attention than bacteriology during the recent pandemic of influenza. As empyema may be caused by a great variety of organisms, either primary or secondary invaders, it will be necessary to include in our discussion bacteria of associated lesions as well as those which occur in the respiratory tract.

The pleura may be infected through the chest wall, the blood and lymph streams, and the respiratory tract, and by direct extension from adjacent infected parts. Organisms introduced into the pleural cavity through the thoracic wall in gunshot or stab wounds vary in different localities, depending upon soil contamination, the clothing and cleanliness of the individual, and many other factors. In France where intensive

cultivation is carried on numerous anaerobic as well as aerobic infections are seen. Elliott and Henry (31) report that 10 per cent of the cases of hemothorax are infected with anaerobic bacteria. Griffiths (32) records two cases of empyema following aspiration of the chest cavity. Both primary and secondary tuberculosis of the pleura have been noted. Wilson (33) records a case due to caries of the dorsal vertebrae. Rupture of subphrenic abscesses or echinococcus cysts into the pleural cavity may lead to pneumonia. The contents of these cysts are very irritating to the tissues. In one autopsy performed by the author in a case of empyema the condition was due to rupture of the esophagus by instrumentation in the removal of a foreign body. Gonorrheic lymphatic metastasis from a peritoneal infection has been recorded by Woodberry (34). Osler (35) states that in Munich empyema was found in about 2 per cent of the autopsies in cases of typhoid fever.

It is obvious that as a rule empyema is due to a respiratory infection. In spite of the vast amount of work which has been done on the respiratory flora, however, no definite advances have been made in determining the relationship of the normal profuse inhabitants of the upper respiratory tract to acute and chronic diseases. Bloomfield (36) believes that a serial quantitative method of culture is necessary.

Soper (37) reports that from September 13 to December 1, 1918, there were 300,719 cases of influenza among the troops in America. During the same period there were 48,079 cases of pneumonia and 19,419 deaths. The total strength of troops was about one and a half million. Therefore it is correct to say that approximately one in every five had influenza, and of these, one in six developed pneumonia, and that of the patients with pneumonia two in five died. The total number of deaths throughout the United States, including the civilian population, was approximately 360,450.

Blanton and Irons (43) report that of a series of 357 normal persons examined before the outbreak of the influenza epidemic, a hemolytic streptococcus was found in the respiratory flora in 75 per cent. In a study of 863 nasopharyngeal cultures on defibrinated blood agar plates, Matz (38) isolated the influenza bacillus in 39.5 per cent, streptococci in 18.4 per cent, pneumococci in 9.4 per cent, and hemolytic streptococci in 2.5 per cent. Small (39) records a study of 1,385 cases of pneumonia in which the incidence of empyema was 9 per cent and the sputum examinations showed that the condition was due to the pneumococcus in 48

per cent (*Pneumococcus* Type 1 31 per cent Type 2 34 per cent Type 4 45 per cent.) Streptococci were found in 46 per cent of the total number of cases, and of these 54 per cent were hemolytic streptococci. John (40) in a study of 136 cases, isolated hemolytic streptococci in the sputum in 36.7 per cent, pneumococci in 31.8 per cent, and the influenza bacillus in 2.4 per cent.

It must be borne in mind that the bacteria mentioned may be found also in the normal mouth and pharynx. Davis (41) reports that no lesions of importance were produced in experimental infection of the intestine with hemolytic streptococci. Hiss and Zimser (42) state that the hemolytic streptococci are found less frequently in the normal mouth, but may be present without causing disease. However the presence of the hemolytic streptococci in the mouth in association with some lesion of the respiratory tract is apt to indicate an etiological relationship.

The positive blood cultures obtained throughout this epidemic were very few in number. John (40) reports 43.3 per cent positive cultures in the streptococcal infections, and 3.8 per cent positive cultures in the pneumococcal infections. It may be stated also that 92.8 per cent of the cases with positive cultures of hemolytic streptococci were fatal. Blanton and Irons (43) obtained only eleven positive cultures in 510 cases of influenza. Hamburger and Meyers (44) look upon empyema as a distinct general sepsis with associated pneumonia and quote Jochmann (45) as stating that streptococcal sepsis may progress with the picture of a lobar pneumonia which may be the source of the sepsis or secondary to it, and that the pleura may be the seat of primary empyema or serve later as a source of streptococcal sepsis. McClelland (46) reports that blood cultures were positive in 50 per cent of 4,980 cases clinically diagnosed as influenza, and that in 1,321 of these pneumonia developed which in 416 proved fatal.

In the opinion of a large number of authoritative bacteriologists the organism of Pfeiffer was not the etiological factor in the pandemic under discussion. Jordan (47) states "We have in the pandemic influenza an infection with an unknown or unrecognized virus which increases the susceptibility of the normal individual to infection with various pathogenic respiratory organisms, and superimposed on the original infection we have a variety of secondary infections. Hektoen (48) and Vaughan (49) are of the opinion that the cause is an unknown condition complicated by secondary infections due to bacteria the type of which is

dependent upon the local conditions in the different parts of the country.

Nicolle and Lebaully (50) report the experimental production of the symptoms of influenza in monkeys and man with filtrates of nasal secretions and blood from uncomplicated influenza cases. The symptoms observed were similar to those of cases occurring in the pandemic. Dujarric de la Rivière (51) produced influenza in himself by injecting the filtrates of blood from four persons suffering with influenza. More recently Ostilly and Gates (52) have succeeded in producing changes in the respiratory tract with a substance which they have been able to carry through fifteen successive animals. Because of these results they are of the opinion that they are dealing with the transmission of a multiplying agent rather than with an active substance produced by it.

On the other hand Nuxum, Pilot, Stangel, and Bonar (53) were able to isolate the influenza organism in only 8.7 per cent of the 2,000 cases studied and therefore conclude that the pandemic was not due to a filterable virus. Krumbhaar (54) reports finding a bacillus identical with that of Pfeiffer in 75 per cent of his cases. Keegan (55) states that the results of cultures taken directly from the lungs show that bacillus influenza occurred either in pure or mixed culture in 82.6 per cent of twenty-three cases studied. Rosenau obtained it in 83 per cent of twenty-six autopsies.

In the report on the influenza epidemic in the British armies in France (56) it is stated that the Pfeiffer bacillus was recovered from ninety-one of a series of 220 specimens of sputum, from sixty of 164 specimens from the nasopharynx, and from two of sixty-eight blood cultures. Smith (57) considers bacillus Pfeiffer the etiological factor.

In various army camps the results of bacteriological examination of the pleural fluids in empyema corresponded more closely than the sputum and blood cultures. In 158 pleural exudates from seventy-five cases examined by Drinell (58) the hemolytic streptococcus was isolated in seventy-four, the influenza bacillus in fourteen, the hemolytic staphylococcus in twenty-two, non-hemolytic streptococcus in twelve, and the pneumococcus in twenty-five. Manson (59) records finding hemolytic streptococci nineteen times in twenty-nine cases, and Brooks and Cecil (60) have found them fifty times in eighty cases. Schorer, Clark, Sanderson, and Dickson (61) report that fifty-six of eighty-one pleural exudates from 181 cases of pneumonia were purulent. Hemolytic

streptococci were found in 53.5 per cent of the exudates, and 70.4 per cent of the purulent pleural fluids. Blake (62) has made an interesting observation on streptococcus viridans; he found that the changes occurring in the blood plates are due to the change of oxyhemoglobin to methemoglobin that this occurs only in the presence of a living micro-organism; that it appears to depend upon the metabolic activity of the bacteria rather than upon the virulence of the particular strain, and that its intensity has a close relationship to the rapidity of growth. The reaction seems to depend upon oxidation and reduction, and can be obtained in the absence of free oxygen.

Simmons and Bigelow (63) report the presence of diphtheria bacilli in sixty cases. The strains isolated in 17.8 per cent were virulent for guinea pigs. The bacilli did not cause any symptoms and the patients remained carriers until the empyema cavity healed.

Stone (64) compares the percentages and the type of organisms observed in the three series of cases of empyema as follows:

Series	Cases	Streptococcus per cent	Pneumococcus per cent
1	7	73.3	26.7
2	95	73.6	26.3
3	85	70.4	29.4

In chronic empyema the bacterial flora is quite varied. The hemolytic streptococci remain for a long time in the exudates. *Bacillus pyocyaneus* was one of the most resistant organisms the writer had to contend with in the chronic cases. This was especially true in cases complicated by bronchial fistula in which appropriate treatment for the elimination of this organism could not be instituted.

PATHOLOGY

When the pleural cavity contains a purulent exudate the condition is designated as thoracic empyema or purulent pleurisy. The exudate varies in quantity from a few centimeters to several liters and its quality varies according to the mode of its formation, its etiology, and the duration of the disease.

In a restricted sense the pathology includes only the morbid changes occurring in the walls of this potential sac which has been converted into a true cavity. As a matter of fact, however, the pleura is the primary seat of the disease in only a few cases. As a rule, the condition is associated with other lesions of which it may be regarded as a part or sequela or is due to the presence of a foreign body. Because of failure to recognize

these facts protective collection of fluid in the pleural cavities in massive active pneumonias have often been evacuated surgically with fatal results.

Primary empyema may be attributed to two modes of infection. Heller (65) suggests that the pleural reactions can be induced by the absorption of bacteria inspired with the air and carried to the pleura by the lymphatics. However, as the pleural and the deep lymphatics of the lung do not anastomose very freely this probably occurs very infrequently. Another hypothesis advanced is that in bacteremias the bacteria have an elective affinity for the pleura. Lichtenstein (66) remarks that in previous epidemics there were numbers of cases of severe primary gripe pleuritis which began with chills, a high continuous fever, extreme dyspnea, and marked cyanosis, and in which in a very short time there was a rapid accumulation of pleural fluid. In repeated postmortem examinations it was definitely proved that these were primary pleurales without any co-existing inflammatory infiltrations in the lungs. Streptococci were often found in pure culture in the exudates.

Wilensky (67) states that over 90 per cent of the cases of empyema are due to post-pneumonic processes spread by continuity from neighboring perforating abscesses or to metastases from distant lesions. Rosenbach (68) suggested that many cases of post-pneumonic empyema may be induced by rupture into the pleural cavity of small subpleural abscesses resulting from the liquefaction of consolidated portions of the lung. Moschowitz (69) apparently unaware of Rosenbach's observation draws a similar conclusion. He objects to the common view that empyema is due to infection by contiguity as this complication is not observed in infection of other serous cavities. Diffuse peritonitis seldom, if ever, results from acute appendicitis unless there has been perforation of the appendix or necrosis of its wall. Moreover, infection of the pleura by contiguity would presuppose flow of lymph in a direction opposite to that demonstrated by physiologists and anatomists. In a large percentage of thirty-six autopsies Moschowitz found subpleural abscesses perforating to the pleura.

As a rule the purulent fluid becomes encapsulated by the deposit of fibrin in the periphery of the cavity. These encapsulations may be single, multiple, localized, or diffuse. While a seropurulent pleurisy is always free, a purulent pleurisy is nearly always encapsulated. The bronchial fistula is due to the rupture of a subpleural abscess into the pleural cavity. Only in

rare instances is it secondary to rupture of the empyema cavity into the bronchial tree. When encapsulated pus occurs in thin sheets between the lobes, the condition is termed interlobar empyema. This is the multiple encapsulated localized empyema. Dissecting pleurogenic pneumonia is formed in the interstitial tissue along the lymphatics.

Pathological changes in the pleura show considerable variation. Especially in pneumococcal empyema in children the pleura may present a normal smooth and glistening surface covered with a purulent exudate. As a rule however the surface is dull and finely granular, shows marked congestion of the blood vessels, and is covered with flakes of fibrin. In other cases there is a pseudo-membrane which strips off easily leaving a smooth surface lined by endothelial cells. In still others the polyhedral endothelial cells may be degenerated or there may be degeneration of the sub-endothelial connective tissue, a change which may alter the character of the exudate. Locke and Barker (70) are of the opinion that endothelial cells are the predominating type found in the exudate of influenza; these are not seen in pleuritis due to streptococci pneumococci or other organisms. He does not state whether they originate from the pleural surface or from the endothelial cells of blood vessels.

Graham (71) has shown by experiments that in the formation of pleural exudates the respiratory movements are of very great importance and that the largest amount of fluid is formed at the end of expiration.

It must be borne in mind that in addition to the presence of associated lesions of the lungs and the purulent exudate there is flattening of the diaphragm and a decrease in diaphragmatic movement due to partial paralysis. Barun (72) has shown that this paralysis precedes the effusion and persists after its disappearance. It is not observed in cases of transudation such as the hydrothorax of Bright's disease, even though the amount of fluid is large.

The lesions of the lungs may be divided into the lobular lobar and interstitial bronchopneumonia. The term interstitial bronchopneumonia was introduced by MacCallum to designate a peculiar form following measles and usually associated with empyema. This condition was found in twenty six of his thirty-seven autopsies. The lobar and lobular pneumonia presented the well known textbook picture. Interstitial bronchopneumonia is described by Cole and MacCallum (73) as follows:

Analysis of the cases appears to show fairly

conclusively that the pneumococcus is responsible for those in which lobar pneumonia was found. The streptococcus haemolyticus, in most instances seems to cause a peculiar form of bronchopneumonia which on account of its anatomical characters, I have designated interstitial bronchopneumonia. There are, however, some cases in which this organism growing in overwhelming numbers or with especial virulence, produces a patchy pneumonia of a type more closely resembling the familiar lobular or bronchopneumonia found so often as a terminal event in persons dying of some chronic disease or in those in whom aspiration of infected material has occurred. This may be referred to as 'lobular pneumonia'.

One of these infections may be superimposed on the other and there may even be found lesions corresponding to each in the same lung.

Fibrinopurulent pleurisy with abundant exudate has occurred with extreme frequency in these cases.

The interstitial bronchopneumonia has been studied in various stages in different cases and found to produce extraordinarily different appearances as it progresses.

"In the earliest stage the pleural surface of the lung is smooth and glistening. The lung is in general air-containing, although atelectatic patches may be making their appearance. On section, small hemorrhagic foci are found scattered through the lung, each showing, as a rule, a gray rather opaque center. These foci measure from 2 to 3 millimeters in diameter, sometimes more, and are so small that several may occur in one of the secondary lobules of the lung; that is, in one of the lobules marked off by the interlobular septa (W. S. Miller). Microscopically it is found that these foci represent the ends of the bronchioles together with the adjacent alveoli. The bronchiole and the ductus alveolaris are filled with leucocytes, among which streptococci are found in pairs or in short chains. There is some infiltration of the bronchiole wall with leucocytes, and the adjacent alveoli contain a few leucocytes, occasionally streptococci, coagulable fluid and great numbers of red blood corpuscles. Not only the alveoli which form a continuation of the bronchiole but also those which lie near its wall, seem to be affected.

In a somewhat later stage the lung can still be distended with air although the patches of collapsed lung are more extensive. On section it is found studded throughout large areas with small gray nodules which project above the cut surface like miliary tubercles and are often surrounded by a red or grayish halo. At this time

there may be visible a minute cavity or depression in the center of each which marks the lumen of the bronchiole. This may be represented, however by the opaque contents of the bronchiole. These nodules have been mistaken by more than one for milary tubercles, and it seems conceivable that the peculiar appearance of this and later stages may be in part at least responsible for the almost universal statement that measles is commonly followed by tuberculosis.

Ilethorpurulent pleurisy, often with excessive effusion of greenish, turbid fluid, accompanies the process from this stage on. In a still later stage the lung is usually much collapsed, dark blue flabby, and aries except in the anterior portions. This is produced chiefly by the pressure of the pleural exudate but partially by the occlusion of the bronchioles. At this stage shot like nodules 3 or 4 millimeters in diameter may be felt all through the lung. On section the partly airless lung sinks into a concave surface leaving the gray peribronchial nodules projecting conspicuously as whitish-yellow lines marking out the whole lobulation of the lung into polygonal fields. In each of these fields there may be three or four projecting nodules which now usually show distinctly a central bronchial lumen. The surrounding tissue may be fairly dense, so that the peribronchial thickening is marked out chiefly by its opaque whiteness. Hemorrhage may in some cases stain the outer lung regions about the nodules. If the bronchi be opened with the scissors, they are found to be lightly dilated toward the periphery of the lung where they become thick walled as they run into the terminal portion which form the center of the nodule. The contents are thick and glutinous.

In still later stages, more extensive infiltration of the peribronchial tissue occurs, and solid yellow patches from 1 to centimeters in diameter appear. The induration about these with edema and hemorrhage becomes confluent so that great large areas may appear consolidated. Septicemia occurs only in the hours just before death and in only one protracted case was there found an infectible lesion in the spleen. In all the others the abdominal organs were normal.

Other pathologists have reported extensive changes in the other organs. Lock Wright and Kume (74) state that of 125 cases of influenza studied at autopsy the majority showed acute parenchymatous changes in the myocardium and other structures similar to those observed in other acute infectious diseases. Hamburger (75) states that parenchymatous degeneration and vacuolization of the myocardium occurred in the

fatal cases. Sammers, Dinnerstein, and Frost (77) describe another picture found at autopsy in a group of influenza cases which resembled that of wood alcohol poisoning viz an intense congestion of the viscera without evidences of pneumonic lesions or associated only with lesions which were so small as to be negligible. Death was accompanied by signs of asphyxia. Careful chemical analysis failed to reveal the presence of poisons.

In the recent epidemic the pathologic lesions are strikingly different. Symmers (76) records an extraordinary variety of pulmonary lesions which arose in the two lungs of the same case and in the lungs of different cases. Concomitant semipurulent pleural exudates were observed in 40 per cent of the cases, multiple pleural and subpleural abscesses in 44 per cent, and intrapulmonary abscesses in 55.5 per cent of all autopsies. There were extensive in areas of the interlobar and interlobular sections of the lungs and it was not uncommon to find solitary multiple, confluent or discrete abscesses of the parenchyma. The presence of acute degenerative changes in the heart liver and kidneys was another striking difference in the recent epidemic. Blood cultures showed streptococci in 10 per cent of the cases, whereas in the pandemic these cultures were almost invariably sterile.

In chronic empyema the pleura varies in thickness from a few millimeters to 2 or 3 centimeters. Usually it is covered with granulation tissue and microscopically is composed of granulation tissue. Collections of polymorphonuclear leucocytes and areas of necrotic tissue surrounded by more mature fibroblasts and showing round-cell infiltration are frequently seen. Sections of pleura from cases in which zinc chloride has been employed show small necrotic areas surrounded by dense bands of connective tissue in which small round cells and plasma cells form an outer wall. Bacteria can be demonstrated in the necrotic areas as well as in the outer zones. A large percentage of the pleura from chronic cases are tuberculous.

Osteomyelitis of the ribs is not an infrequent complication. Attempts at bone regeneration with bursae extensions of processes and bridge formation between the ribs are often found. These osteophytes are due to chronic inflammation.

SYMPTOMS AND DIAGNOSIS

The diagnosis of empyema is made on the observations of the patient and his clinical chart the physical signs, the roentgen-ray findings, and exploratory puncture. Frequently it can be made only by exploratory puncture. Gray (78)

states that in many cases diagnosed clinically as lobar pneumonia autopsy showed no evidence of pneumonic consolidation, but revealed instead large amounts of exudate or fluid with atelectasis of the lungs. The group of cases presenting the textbook symptoms offer no difficulty in the diagnosis. As a rule we find a decrease in respiratory movement on the affected side and bulging and increased fullness of the intercostal spaces. Vocal fremitus is absent. Percussion elicits flatness or marked dullness except at the apex above the fluid where the note is almost tympanic. On auscultation the breath sounds are absent.

Thomas (79) describes a syndrome which he regards as pathognomonic of the rupture of an encapsulated empyema into the pleural cavity. During convalescence the patient feels a sudden sharp pain in the chest following slight exertion. In a few hours he becomes critically ill, the temperature rises to 102 to 104 degrees F, the pulse becomes rapid, and respiration which is shallow and extremely painful, varies in rate between fifty and sixty per minute. The pain localizes in the lower part of the chest or in the abdomen. Distention with marked tympany extending well up over the liver and general tenderness may be more marked on one side than on the other. The chest findings are not striking but indicate the presence of a small amount of fluid. There is marked leucocytosis. Prostration is extreme. Thomas believes this remarkable reaction is due to the toxemia resulting from the absorption of pus from the large serous surface rich in lymphatics.

In the influenza epidemic Reilly (80) noted an unusual syndrome consisting of paroxysmal attacks of pain on the right side at the level of the insertion of the diaphragm. In many instances this pain lasted about half an hour and returned at intervals of two or three hours throughout the day. Biering, Luginbuhl, and Burt (81) record a severe infection affecting eight members of one family and causing seven deaths. Three of these persons developed empyema.

Mention should be made of pulsating empyema, first described by MacDonnell. This is of two types: 1. the intrapleural pulsating empyema and the pulsating empyema necessitatis in which there is an external pulsation. The pulsations are due to the heart impulse, but no satisfactory explanation of the mechanism of transmission of this beats has been offered.

Wesler (82) subdivided encapsulated empyema into four types: the parietal diaphragmatic, and interlobar and an encapsulation between the

lung and mediastinum. Peakund (83) describes an interlobar empyema which apparently followed latent pneumonia.

Empyema may perforate any of the thoracic viscera or extend to the external surface through a fistula opening at some distance from the pleural cavity. Foot (84) reports a case in which there was a communication with the psoas muscle. Meigs (85) had a case with a fistulous opening at the umbilicus. These more rare complications are included in the discussion of the diagnosis as they may be encountered as persistent sinuses and their true nature can be determined only by means of the X-ray with the injection of bismuth.

The X-ray is a valuable aid in the early diagnosis of empyema. Nims (86) observed that free collections of pus in the pleural cavity are usually preceded by small collections between the lobes. Manson (59) found the roentgen ray of value when the quantity of pus was 500 cubic centimeters or more in which case the rib shadows are obliterated and the costodiaphragmatic angle is obscured. Contrary to accepted teachings, the shadow cast by thick pus is lighter than that cast by serous fluids and at times it is difficult to state from the plates whether or not pus is present. Shadows due to sanguinous fluid are relatively dense.

Muller and Lusk (87) found that the X-ray is of less value in the differentiation of pus from consolidation but gives accurate data regarding lobe involvement. Diemer (88) emphasizes the value of the X-ray in the diagnosis of interlobar empyema, which is often very difficult to detect in the routine physical examination. Stewart (89) has pointed out that early effusions appear in the axillary space and stand out in the outer zone of the chest cavity as ribbon-like shadows with a sharp inner border. Davis (90) concludes from a study of 1,000 cases that it is impossible to distinguish small amounts of fluid from consolidations of lung tissue. He points out also that as a rule the diaphragm is higher and more fixed on the involved side than on the non-pathologic side.

Lambert (91) emphasizes the necessity for a careful X-ray study of the cavities of chronic empyema before treatment is undertaken. This is best accomplished by injecting a semi solid or fluid substance which is opaque to the roentgen ray and is not injurious. Stevens (92) advocates the use of thorium nitrate, but in large cavities this may give rise to unpleasant reactions and hematuria. Beck (93) concludes from his experience in a large series of cases of empyema that there is no danger in the use of his paste if

the proper technique is employed. He does not agree with the statement that laminectomy separates out of the suspension during the X-ray examination. The writer has seen Beck inject a large series of empyemata without causing any unfavorable after-effects.

While the roentgen ray is of great aid in the study of empyema the value of a large-gauge exploratory needle should not be forgotten.

COMPLICATIONS

The chief complication of empyema are sepsis and perforation. Perforation into a bronchus is indicated by an attack of violent coughing during which almost pure pus is expelled. The perforation or rupture of encapsulated empyema into the general pleural cavity has already been discussed with the symptoms.

Sudden death may result from too rapid evacuation of the pleural content and from injection of fluid in the chest cavity. In the latter case it is due to a pleuro-cardiac reflex (vagus). In very rare instances temporary blindness may follow injections of laminectomy compound. The writer observed this once in a series of more than 200 cases, when the injection was made into a very large cavity. Apparently a convulsion was formed. The patient recovered completely in about ten days.

PROGNOSIS

It may be well to analyze the term prognosis before discussing the statistics. The prognosis is the prediction of the course of disease. It is possible to make a prognosis only when we have exact knowledge of the disease itself, the condition of the diseased body and the influence of treatment. It is obvious, then, that statistics on empyema are of only academic value. If it were possible to standardize the method of treatment and to agree as to the exact nature of empyema it would still be necessary to group the patient into numerous subdivisions on the basis of their resistance.

This can be fully appreciated when we study the report of Graham (84) of the Surgeon General of the United States Army on empyema in the base hospitals, a report compiled from a questionnaire sent to the principal base and general hospitals. The average mortality in twenty-five camps was 30.3 per cent. In those hospitals in which immediate drainage was advocated, it was 31.8 per cent, while in those in which drainage was delayed (aspiration only being done) it was 31.6 per cent. The mortality of simple thoracotomy was 39.4 per cent and that of rib resection

31.3 per cent. High as these figures are, however, they do not approach the remarkably high death rate in some of the camps. At Camp Fenton the mortality was 84 per cent, at Camp Green, 57 per cent, at Camp Wheeler, 65 per cent, and at Camp Doniphan, 57 per cent. Graham attributes the striking differences between the various camps to the fact that there was marked disagreement as to the condition diagnosed as empyema and as to the method of treatment. The exudates varied from a slight turbid serofibrinous dishwater fluid to frank pus demonstrable only microscopically to frank pus recognizable on macroscopic examination. In general, the camps which reported the lowest mortality regarded a few cases of empyema only those in which the exudate was frank pus. Conversely the highest mortality was that of camps in which all cases showing even microscopic pus in the pleural cavity were considered empyema cases.

If we include these borderline cases of pneumonia in the pandemic, the prognosis of empyema must be classed with that of bubonic plague and relapsing smallpox.

Leroux and Legendre (95) state that the prognosis of empyema should be based not on the nature of the fluid or the organisms found, but on the condition of the pneumonia processes.

Miller and Lusk (87) have classified patients with streptococcal empyema into three groups: 1. Those who die early from acute toxemia before treatment is given.

2. Those with multiple pus foci. Death always results in such cases because it is impossible to detect and drain all of the foci.

3. Those with moderate toxemia and localized pus, who usually recover after early operation or aspiration followed by operation.

Clendinning (96) has tried early operation, aspiration and the let alone policy in the treatment of streptococcal empyema and has found that the results are about the same in the three groups. According to Hahn (97) the mortality from the pneumococcal empyema varies from 8.1

per cent. La Ross (98) gives a mortality of 53 per cent for all ages, and 45 per cent for those of adult age. Holt (99) reports a mortality of 10 per cent for children under 1 year and of 58 per cent for those under 15 years. Winkler (100) reports a series of 299 consecutive cases from the years 1904 to 1914 in which the mortality was 28 per cent.

In cases studied by Criss (78) the mortality was 41 per cent when the empyema developed the first week, 20 per cent when it developed the second week, and only 7 per cent when it de-

veloped later than the second week. In cases treated surgically the mortality was 21 per cent, while in those not operated upon (not including cases operated upon late) it was 74 per cent.

The prognosis of infected haemothorax depends upon the nature of the wound the causative factors, and the organisms in the clot. In a study of 450 cases Hutchinson (101) found that bullet wounds were less serious than other gunshot wounds. Infection occurred in about one-fourth of the shell wounds in which the missile was not retained and in about one-half of these in which the missile was retained. In another communication Hutchinson (102) states that in cases in which the wound was closed tight the mortality was less than in those with open chest wounds. Lockwood and Nixon (13) noted that if the diaphragm was injured and not repaired the patient died. This was true also in cases of extensive injuries of the bony skeleton if the comminuted ribs and spicules were not removed.

Tuberculous empyema is usually a complication of pulmonary tuberculosis, frequently developing in its advanced stages. It is obvious then that the prognosis is grave. McKinnis (104) reports on twenty-eight cases of tuberculous empyema with mixed infections. Eight of these were treated by aspiration and twenty by open drainage. Of the patients operated upon, nine died, one recovered and the rest are chronic invalids. Letulle (105) also concludes that the prognosis of tuberculous empyema is very unfavorable.

According to Stevens (107) recurrences of empyema developed after operation in fourteen (25 per cent) of fifty-six cases reported by the Empyema Commission (106) as having healed under simple drainage, and in eight (per cent) of sixty-seven cases which healed under Carrel-Dakin treatment.

From these statistics we must conclude that empyema requires considerable future study and can no longer be looked upon as a closed chapter in surgery.

PROPHYLAXIS

The difficulties of prophylaxis in empyema are exceedingly great on account of the large number of factors which may cause this condition.

In advocating the use of a mixed vaccine of pneumococcus, hemolytic streptococcus, staphylococcus, and influenza bacillus for the prevention of influenza Rosenow (108) stated that only twenty-eight of 481 persons on whom this vaccine was used developed influenza. Cecil and Austin (109) who have given a pneumococcus vaccine to

13,460 troops report that the cases of pneumonia among vaccinated troops were less than half those among unvaccinated troops. Vaughan (49) states that vaccines have proved of no value whatever in influenza. The cases of influenza in the pandemic showed a leucopenia while infection with Pfeiffer's bacillus caused a leucocytosis. It is doubtful whether the etiological factor of influenza is known. Gay (110) was unable to demonstrate any value in vaccines in empyema produced experimentally in rabbits.

According to McCoy (111) the uncontrolled use of vaccines has led to the general impression that they are of value in influenza, but in every case in which they have been tried under perfectly controlled conditions they have failed to influence definitely either the morbidity or the mortality.

McCoy Murray and Teeter (112) studied two groups of 390 persons. In the vaccinated group 119 developed influenza, twenty-three developed pneumonia and ten died. In the unvaccinated group there were 103 cases of influenza, seventeen cases of pneumonia, and seven deaths.

A commission (113) appointed to study vaccine therapy found that it was of no specific value in influenza but also that it had no unfavorable results.

TREATMENT

As a rule empyema is a complication of some other disease. It should be borne in mind, therefore that the associated morbid process (pneumonia) requires appropriate treatment. It is obvious that the treatment of empyema should be secondary to the treatment of a massive active pneumonia. Failure to recognize this basic fact was responsible for the appalling mortality during the pandemic of influenza. Curative treatment for the empyema should be begun only with the subsidence of the active associated lesions. Hygienic measures, nursing diet, and routine measures are indicated as in any other acute illness. For convenience of description the methods of treatment are described in the following order:

- I. Non-operative aspiration dyes, chemicals
- II. Operative anesthesia, pneumothorax, shock

1. Acute empyema
2. Chronic non tuberculous
3. Tuberculous

The term non-operative is used here to include all methods of non surgical intervention except aspiration. Major (114) reports twenty seven cases treated by aspiration and the injection of gentian violet into the pleural cavity. There

were fourteen urea and eight failures. The bactericidal properties of gentian violet have been determined by Churchman (115). Emilie Weil and Loysel (116) employed a similar method except that they injected ethylene blue and air into the pleural cavity. Ultimately seven of the twelve cases came to operation. After careful experimental study Gas and Lister (117) have come to the conclusion that there is little certainty of the ultimate usefulness of dressings as disinfectants in bacterial infection. Sherman (118) advocates the method of injecting a 2 per cent solution of methyl glycerin and iodoform dressing the mortality at Camp Sherman from 50 per cent to 5 per cent. In a later communication on the end result in these cases Dodge (119) reports that of the fifteen patients reported cured four were lost sight of and the remaining eleven were re-treated at the hospital within a few weeks for subsequent operation. Marston (120) reports on forty-three cases treated by repeated irrigation and the injection of a 2 per cent formalin solution in glycerin. He is unable to cite a single cure obtained by this method alone. It is a matter of common knowledge that a marked cerebral flow itself produces formalin into the tissues. Dieckhoff (121) employs a method which is very like Lister's, a bandage non-occlusive measure a definite incision and an erysipelatous to the middle free margin of the wound.

The lack of common knowledge of the pathology of empyema has given an impetus to the employment of special method of treatment. There are now instances in which simple aspiration or a paracentesis with the injection of an antiseptic into the pleural cavity has secured a sufficient number of cures obtained by this method so small.

Compared with that of other recognized procedures and the chances of producing a chronic condition with permanent secondary changes in other organs (myeloid degeneration) is great that such new ventures cannot be recommended too strongly.

OPERATIVE PROCEDURE

Incision. A small local anesthetic should be employed in all extrapleural operations. Rastfett (122) concludes that in the near future it will be necessary to establish rules for the use of general and local anesthetic. For major intrapleural operations general anesthesia is indicated, but it must be remembered that the anesthetic may add to the existing pathological chest condition. From a careful analysis of the statistics, Cutler (123) has found that one patient in every thirty to fifty operated on

develops a pulmonary complication regardless of the anesthetic used, and one patient in every 150 to 175 dies from such a complication. The presence of sepsis is a factor. Armstrong (124) has shown that in thirty-six of fifty-five cases in which a lung complication developed there was septic focus in some part of the body. Herb (125) reports remarkable results with ether and anaesthesia properly induced. For major thoracic surgery Lawrence (126) prefers the intratracheal administration of ether. Crutcher (127) concurs with the statement that magnesium sulphate enhances the action of morphine. One-eighth of a grain of morphine in 1 or 2 cubic centimeters of a 25 per cent magnesium sulphate will relieve pain in ten to thirty hours instead of from two to four hours as it does when it is given in a cube of water. It also relieves shock which is such an important factor in thoracic surgery. Crile and Lower (128) describe a quick exhaustion of the central nervous system. Da (129) has shown experimentally that chloroform causes the greatest degree of shock either the next greatest, and finally the minimum degree.

Pneumothorax. Lehart (130) has shown by careful experiment that in open pneumothorax repairs the greater exchange in the lungs increases the carbon dioxide content and the hydrogen ion concentration of the blood and reduces the respiratory quotient. Graham and Peck (131) have proved experimentally the common belief that in the case of collapse of one lung in a unilateral open pneumothorax normal respiration is maintained in the other lung. It has been shown also that in bilateral open pneumothorax in the normal heart is no more dangerous than unilateral pneumothorax provided the total open area on the two sides is not larger than the area of one opening. It is felt then that the pleural spaces must be considered as one unit. Only in all thoracic cases in which the mediastinal pleura is very much thickened may the two sides be considered somewhat independent.

Crutcher (132) has shown also that theoretically an opening 5 by 3 centimeters is the largest for which compensation can be established in man. Blaver (133) concludes that this modification due to a small opening so the chest wall is compensated by relaxation of the mediastinum. Verbrugg (134)

strongly advocates closed thoracic surgery has shown that open pneumothorax causes a fall of degrees in heat after the opening of the chest wall, increases the danger of infection, and results in marked disturbances in the circulation. Norman (135) states that dyspnea due to imperfect alveolar ventilation of the wound lung. According

to Sturvelman and Rosenblatt (136) the accumulation of fluid in the pleural cavity is induced by therapeutic pneumothorax.

It is evident from this research that open pneumothorax affects the opposite lung if firm adhesions are not present or if the mediastinal pleura is not thickened and accustomed to the changes in pressure.

On the basis of treatment Moschcowitz (69) divides acute empyema into three stages: the formative, the acute, and the chronic stage. In the formative stage the more important conditions demanding treatment are the toxicæmia, active pneumonia, and extensive pleural exudates. It is obvious that the treatment of the empyema itself should be only palliative. Palliation is best obtained by simple aspiration relieving the compression of the lung.

Stone, Phillips, and Bliss (137) have shown that the mortality was 63.8 per cent in eighty-three cases without preliminary aspiration and 22.2 per cent in cases with deferred operation preceded by aspiration. Stone (64) reports the results of 310 cases in eighty-five cases operated upon early the mortality was 61.2 per cent, and in ninety-four treated by early aspiration and late operation it was 9.5 per cent.

In the formative stage, aspiration alone is indicated. Further middle-rib surgery will only increase the mortality rate.

In the acute stage the pus is walled off and the treatment is that of any other abscess.

There seems to be general agreement among surgeons that early aspiration followed by late operation is the method *par excellence*. Lilienthal (38), Aschner (139), MacKenna (140), Ashurst (141), Ramsdell (142) and many others agree that this procedure gives the best results. The chief point of variance is whether the open or the closed method is indicated. Even if the closed method is employed, there is a leakage of air into the pleural cavity after a period of a week or more. Mosinger (143), Phillips (144), Delbet and Girode (145) and many others claim to have had the most excellent results with the closed method. The use of antiseptics in the thoracic cavity is another disputed point.

While a great many good surgeons have reported very excellent results from the use of Dakin's solution (146), acriflavine (147), proflavine (148), crystal violet, and gentian violet (115) there is another group (Alcyonhan, Lehman, Burghard, and Wright, 149) who believe that the treatment of suppurative wounds by means of antiseptics is "illusory reasoning."

In 1915 Sir Almonroth Wright (150) stated that

an antiseptic if ever sterilized a heavily infected wound it would be a matter to announce in all the evening and morning papers. While there is no doubt that it is possible to sterilize the surface of empyema cavities by the Carrel Dakin method (151) the writer is convinced by his experience with this procedure in over 200 cases that it is impossible to sterilize the deeper underlying structures as microorganisms have been demonstrated in the thickened walls removed from empyema cavities so treated.

Excellent results from thoracotomy and rib resection have been reported. On anatomical and physiological grounds (distribution of lymphatics) it appears that rib resection should be the method of choice. The mortality rate as reported by Graham to the Surgeon General is less following rib resection (31.3 per cent) than following thoracotomy (39.4 per cent).

Healing is prevented in empyema by many factors such as foreign bodies (fragments of missiles, and especially lost drainage tubes) incompletely drained simple or multilocular pus pockets, and osteitis of the ribs. Gibbon (152) concludes that if the cavity is thoroughly sterilized it may be sutured and the lung will gradually obliterate it. Petit (153) reports six cases successfully treated by this method after an old sequestrum of the ribs had been excised. Tuffer (154) reports forty-seven successful results from secondary suture after sterilization of the cavity and decortication of the lung. Stoney (155) limits his treatment to sterilization of the cavity and secondary suture.

Delorme (156) classifies chronic empyema cases into three groups: (1) those in which there is no fever and the general condition is good; (2) those poorly drained and febrile; and (3) those with bronchial fistula. In the latter two groups a pleurotomy is performed to bring the temperature to normal, and in a subsequent operation the thickened pleura is removed to allow expansion of the lung. Lilienthal (157) suggests decortication with non-collapsing thoracoplasty which he accomplishes by separating the ribs with a special retractor. He advises immobilization of the lungs if necessary.

Other operations for the treatment of chronic empyema are based on the principle that if the lung cannot be liberated and caused to expand, it is necessary to bring the chest wall to it. The two most important operations of this class are the Eastlander (158) and Schede (159) operations. The so-called Eastlander operation was first performed by Warren Stone, an American surgeon (New Orleans, La.) in 1873, six years before

3. GRANTING, McHardland Textbook of Pathology Philadelphia Saunders, 9 9, p 600
33. WILSON, C. Empyema due to causes of the dorsal vertebrae. *J Path Soc Phil* 1891 xiv 71
34. WOODBERRY, H. S. Gonorrheal empyema. *Surg Gynec & Obst* 9 4, xxvii, 6
35. OCKER and McCRAE. The Principles and Practice of Medicine. New York Appleton, 9 p
36. BLOOMFIELD, A. L. The serial quantitative method of culture in the study of respiratory disease. *J Am M Ass*, 92, lxviii, 87
37. SORRE, G. A. The pandemic in the army camps. *J Am M Ass*, 918, lxxi, 899
38. MATZ, P. B. Laboratory studies in influenza at Camp. *Tras* = *Am J M Sc* 9 9, clviii, 73
39. SMALL, A. A. Pneumonia at base hospital. *J Am M Ass*, 9 8, lxxi, 700
40. JOHNS, H. J. Pneumonia at base hospital, 9 8-9 9. *Am J M Sc* 920, clv, 144
41. DAVIS. The fate of streptococcus hemolyticus in the peritoneal tract. *J Infect Dis* 920, xxvi, 7
42. HILL, H. and ZIMMER, P. H. A Textbook of Bacteriology. New York Appleton, 9 p 7
43. BLANTON, W. B. and IRVING, E. E. A recent epidemic of acute respiratory infection at Camp Custer. *Mich J Am M Ass*, 9 8, lxxi, 73
44. HANFORD, W. W. and MATHER, L. H. Pneumonia and empyema at Camp Zachary Taylor. *Ky J Am M Ass* 9 8, lxxi, 95
45. JOCHIMANN. Streptokokkenempyem. *Lehrbuch der Infektionskrankheiten*, p 37. Quoted by Harnberger (41)
46. McCLELLAND, J. E. Bacteriological observations of the epidemic of influenza at Camp Beauregard, La. *Am J M Sc* 919, clviii, 80
47. JORDAN, E. O. The etiology of influenza [Discussion, Am Pub Health Ass meeting]. *J Am M Ass* 9 8, lxxi, 809
48. HEATON, L. The etiology of influenza [Discussion, Am Pub Health Ass meeting]. *J Am M Ass* 9 8, lxxi, 808
49. V. CORN, V. C. Prophylactic inoculation in pneumonia and influenza [Discussion, Am Pub Health Ass meeting]. *J Am M Ass* 9 8, lxxi, 808
50. NICOLLE and LEBAILL. *Ann de l'Inst Pasteur* 9 9, xxxiii, 345
51. DETARDEAU DE LA RIVIERE. *Congrès Acad d Sc Paris*, 9 8, clviii, 406
52. OLLIVER, P. A. and GATES, H. L. Experimental studies of nasopharyngeal secretions from influenza patients. *J Exper Med* 92 xxxiii, 5
53. N. RUM, J. W. PILOT, I. STANOR, F. H. and BOWEN, D. E. Pandemic influenza and pneumonia at large civil hospital. *J Am M Ass* 9 8, lxxi, 50
54. KUTCHERMAN, F. B. The bacteriology of the prevailing epidemic. *Lancet* 9 8, 3
55. KIRKMAN, J. J. The prevailing pandemic of influenza. *J Am M Ass* 9 8 lxxi, 95
56. Influenza in the British Armies in France. *Brit M J* 9 8, 805
57. SMITH, A. J. Personal communication
58. DREWELL, W. G. Laboratory report on epidemic pneumonia. *Am J M Sc* 9 9, clviii, 6
59. M. WOOD, J. M. Report of the Surgical Service, U S Army Base Hospital, Camp Dodge, Iowa, on the epidemic of influenza of 9 8. *Am J M Sc* 9 9, clviii, 144
60. BROOKS and CECIL. A study of eighty cases of empyema at Camp Upton. *Arch Int Med* 19 8, xxi, 569
61. SCHWABER, CLARA ET AL. Pneumonia and empyema at Camp Mitchell 19 7-918. *Med Rec* 9 9, lxxv, 673
62. SLAVE. The formation of methemoglobin by streptococcus indolis. *J Exper M* 9 6, xlv, 15
63. SINGER, J. S. and BULLOW, G. H. Diphtheria bacilli from postoperative empyem. *J Infect Dis* 9 9, lxxv, 9
64. STORCK, W. J. The management of post-pneumonic empyema based upon 3 cases. *Am J M Sc* 919, clviii, 1
65. HELLER, A. Ueber subpleurale Lymphdrüsen, zugleich ein Beitrag zur Lehre von den Stenohäthoraxkrankheiten. *Deutsche Arch f Klin Med* 895, 14
66. LICHTENHART. *Infusioes Nothoagel System*, Ed 896 p
67. WILDERY, A. O. The present status of empyema. *Am J M Sc* 920, clx, 384
68. RÖDERMACHER. *Nothoagel Spennelle Pathologie und Therapie*, Wien, 914 xiv
69. MOSCOWITZ, A. V. New conceptions of the pathogenesis and treatment of empyema. *Am J M Sc* 920, clx, 669
70. LACER, B. and BAKER, R. Cytological studies of pleural exudates complicating influenza. *Am J M Sc* 9 9, clviii, 573
71. GRAHAM, E. A. The influence of respiratory movements on the formation of pleural exudates. *J Am M Ass* 92 lxxvi, 784
72. BURRY, F. The Radio-Diagnosis of Pleuro-Pulmonary Affections. Yale University Press, 9 8 p 3
73. COLE, R. and MACCALLUM, W. G. Pneumonia at base hospital. *J Am M Ass* 9 8, lxxi, 246
74. LOCKE, WILSON, and KIRK. The pathologic anatomy and bacteriology of influenza. *Arch Int Med* 9 9, xxx, 54
75. HANFORD, W. W. Involvement of the auricle and conduction path of the heart following influenza. *Am J M Sc* 920, clx, 479
76. STRICKER, D. The significance of the vascular changes in the so-called pandemic influenza. *New York M J* 9 9, cx, 739
77. STRICKER, D. DITTMER, M. and FROST, A. D. Differences in pathology of the pandemic and recurrent forms of so-called influenza. *J Am M Ass* 920 lxxvi, 646
78. GRIFFIN, H. Pneumonia and empyema. *Boston M & S J* 9 9, clxxx, 365
79. THOMAS, H. M. J. Rupture of encapsulated empyema into the pleural cavity. *J Am M Ass* 9 9, lxxi, 29
80. REILL, T. F. An unusual pain syndrome associated with the present wa of influenza. *J Am M Ass* 92 lxxvi, 403
81. BORRERO, L. L., LOGAN, C. B. and BURR, C. W. Streptococcus pneumoniae and empyema, an infection affecting eight members of one family with some details. *J Am M Ass* 918, lxxi, 1473
82. WHEELER, H. The diagnosis of encapsulated pleural effusions. *Med Clin N America*, 920, iv 69
83. PERKINS. An obscure case of empyema. *Cleveland M J* 9 7, xv, 788
84. FOOT, A. W. Empyema communicating with the left psoas muscle and passing into the vertebral canal. *Proc Path Soc Dublin*, 1874, 98

- 36 SHIVELMAN, B P and ROSENBLATT J Multiple fluid collections in the chest in the course of therapeutic pneumothorax *Am J M Sc* 9 cin, 229
- 37 STOVY, W J PHILLIPS B G and BLISS W P A clinical study of pneumonia *Arch Int Med* 9 8, xxi, 409
- 38 LILIENTHAL, H Empyema of the thorax *Ann Surg* 9 7 lvi, 200
- 39 ASCHNER, P W Acute empyema of the thorax treated by minor intercostal thoracotomy *Surg Gynec & Obst* 920, xxx 54
- 40 McKENNA, H Operation for empyema *J Am M Ass* 9 9 lxxi 743
- 41 ASHURST A P C Observations on empyema *Ann Surg* 920, lxxii,
- 42 RAYNOBOFF J Empyema at the Cincinnati General Hospital during the influenza epidemic *J Am M Ass* 920, lxxiv 238
- 43 MORRIS, A E The surgical treatment of empyema by closed method *J Am M Ass* 9 8, lxxii, 206 *Am J M Sc* 9 cin, 676
- 44 PHILLIPS, H B Empyema, with special reference to the use of the Philips empyema apparatus *J Am M Ass* 9 9, lxxii, 274
- 45 DELBET P and GIBOUD, G Traitement des pleurèmes purulents par le drainage étanche et l'aspiration continue *Rev de chir Par* 920, lxxvii,
- 46 D'AN CONY, DAUFRES, L, LERVO Antiseptic action of substances of the chloramine group *Proc Roy Soc Lond* 9 6, lxxix, 3
- 47 BROWNE, C H and THORNTON, L H Antiseptic properties of acriflavine and prodaine *Brit M J* 9 7 20
- 48 CARLIS R B and TEMPLETON W Acriflavine and prodaine *Lancet*, 9 8, May 24, p 634
- 49 MOTTURA LEHRMAN, BURKHARD, and WRIGHT Quoted by Carrel and Debelly
- 50 WRIGHT A An address on wound infections *B r M J* 9 5 p 22
- 51 Review of War Surgery and Medicine Surgeon General Office 9 9 Vol No 5
- 52 GIBBOUD, J H The non-operative treatment of chronic empyema *Am J M Sc* 9 7 cin, 469
- 53 PETIT R Deux cas des fistules pleurales près pleurésie purulente déinfectée au Dakin et traitées secondairement *Bull et méms Soc de chir de Paris*, 9 9 xlv 77
- 54 TOUTIER, F Traitement des épanchements purulents de la plèvre *Presse méd Par* 9 8, xxi, 497
- 55 STOVY R A Modern treatment of empyema by antiseptics *Brit M J* 9 3, 2, 95
- 56 DELORME, E De la décontamination pulmonaire dans les pleurésies traumatiques consécutives aux blessures de guerre *Bull Acad de méd Par* 9 8, lxxii, 4
- 57 LILIENTHAL, H Empyema—a syllabus of operative treatment *Ann Surg* 920, lxxii 57
- 58 ESTLAUGH, J A Résection des côtes dans l'empyème chronique *Rev mens de méd et chir* 879 iii, 57
- 59 SCHMIDT, M Die Behandlung der Empyeme *Verh d 9 Cong f am Med* 890, ix, 4 *Abst Therap Monatsb* 1890, 75
- 60 BRICK E G The empyema problem *Surg Gynec & Obst* 9 9, xlvii, 379
- 61 FOWLER, G R Thoracic surgery in tuberculosis *Ann Surg* 896 54

ABSTRACTS OF CURRENT LITERATURE

GENERAL SURGERY—SURGICAL TECHNIQUE

ANÆSTHESIA

Droemer, L. Conduction Anæsthesia in the Leg
(Ueber Leitungsanæsthesie am Bein) *Zentralbl f
Chir* 92, xix, 76

Droemer exposes the sciatic nerve with 0.5 ccm of a 0.25 per cent solution of novocaine and anæsthesizes it with 0.5 ccm of 1 per cent solution of novocaine. At second operation the femoral nerve is exposed with the same amounts of the same solutions. The obturator nerve is charged with 0.5 ccm. of a 1 per cent solution through the wound. The lateral cutaneous femoral nerve is infiltrated through the skin with 10 to 20 ccm. of 0.5 per cent novocaine solution. Anæsthetization of the ilio inguinal and iliohypogastric nerves may also be necessary.

Droemer has induced anæsthesia in thirty three crura in this manner but he does not consider his technique any better than the Schleich and Crile methods. The Woodhouse procedure is dangerous because of the exceedingly large dosage used.

KLEINKAUFF (2)

Koenig, F. Experiences in 600 Cases of Local and Conduction Anæsthesia (Erfahrungen an 600 Fällen von Lokali und Leitungsanæsthesie) *Deutsche Zeitschrift f Chir* 9, cliii, 87

For injection anæsthesia, as the author designates local anæsthesia and lumbar anæsthesia, novocaine B tablets are used at the Woernberg clinic. Tropocaine is employed only for lumbar anæsthesia. The question as to the best dosage of novocaine is still undecided.

In the 600 cases reviewed there were only twenty six failures (4.3 per cent). These included lumbar paravertebral and parascapular anæsthesia, and sphincter anæsthesia induced by the technique of Happee or Mulley. When induced in the proper indications and with a correct technique, injection anæsthesia will take the place of general anæsthesia.

In discussing its dangers Koenig states that considerable cardiac and circulatory disturbance is present in twenty-seven cases (4.5 per cent). 1 cases of lumbar and paravertebral anæsthesia there were two deaths, but in the author's opinion these could not be attributed to the procedure. Slighter cardiac symptoms appeared in 10 cases. Marked respiratory disturbances occurred once when the Mulley technique was used and once in paravertebral anæsthesia with temporary arrest of respiration. In fifteen cases, seven of which are those of children, there was marked excitation. Vomiting oc-

curred in twenty one cases (five times in abdominal operations). Vertigo, headache and sweating were sequelæ in twenty-one cases. In one case of strabismus in which paracerebral anæsthesia was induced there was collapse with Cheyne-Stokes breathing but the patient recovered. In certain cases of arteriosclerosis and operations for hernia secondary hæmorrhage occurred. Plexus anæsthesia was occasionally followed by long-continued paralysis.

Conduction anæsthesia causes less shock than general anæsthesia. Only thirteen patients left the operating table in very poor condition, and of fifty two had been subjected to an extremely painful operation only three were in poor condition. Aspiration is avoided. The resulting local anæsthesia simplifies operations on the skull and lower jaw and gutter operations. The injection and circumplex are harmless, being comparable to the first stage of ether and ethyl chloride anæsthesia. Anæsthesia of the trigeminal nerve and the nerves of the extremities is quite harmless, but in paravertebral, plexus, and sphincter anæsthesia there is danger of intoxication and secondary injuries. Lumbar anæsthesia is applicable only in diseases threatening life.

KLEINKAUFF (2)

Jonnesco, T. A New Technique for General Spinal Anæsthesia (Une nouvelle technique de l'anæsthesie générale) *Presse méd. Par* 9, xxx, 979

Since 1908, a total of 5,066 operations (1,766 high and 3,300 low) have been performed in Jonnesco's clinic under spinal anæsthesia without any deaths and without any severe immediate or late complications. To these Jonnesco adds similar operations by others, which brings the total to 3,321 operations (1,031 high and 2,290 low) with only 14 fatalities.

Jonnesco is convinced that, as the result of the new technique he describes in this article, general spinal anæsthesia will soon become the method of choice. It is applicable to all cases and operations. It is simple and easy, and demands no previous preparation of the patient. The equipment required consists of only a fine 6 cm. needle, hypodermic injection syringe, and an ampulla containing the anæsthetic solution. The spinal puncture, high or low, is made very easily. The method is rapid since the puncture can be made and anæsthesia follows in about five minutes. Apart from its technical advantages, general anæsthesia has also the advantage of precision as it is regional and apical and its effects can be limited to the nerve root selected with almost mathematical exactness.

The first change made by Jonnesco in his original method was the addition of strychnine to novocaine. Since 1911 he has added caffeine also, but since May 1921 has omitted the strychnine and doubled the caffeine. The employment of the new mixture has necessarily modified the technique slightly and in certain types of operation the puncture point has been changed.

W. A. BRENNAN

Scholl, A. J., Jr. Further Experiences in Sacral Anesthesia in Urology. *California State J. U.* 1922 21:43

There are two common methods of anesthetizing the sacral nerves, viz the injection of novocaine solution into the main central canal through the caudal foramen, and the individual injection of each nerve as it exits through the lateral sacral foramen.

The caudal injection is satisfactory for most operations on the perineum or external genitalia, and for practically all endovascular procedures. A single caudal injection however requires twenty minutes to induce complete anesthesia. A further disadvantage of the method is that in from 1 to 5 per cent of the cases the resulting anesthesia is not complete.

When the lateral nerves are injected individually there is almost immediate anesthesia of the area involved and failures are unusual, but it is much more difficult to inject the nerves as they leave the canal than to make the single caudal injection, and the contact of the needle against the peristome or the occasional striking of the nerve causes pain.

In discussing his technique Scholl states that the novocaine solution is prepared fresh for each case. As a rule, 30 ccm. of a 1 per cent solution of novocaine bicarbonate solution are used. In the cases of children and adults with reduced vitality the dose is decreased. The most satisfactory results have been obtained with Metc novocaine this is kept in powders with enough sodium bicarbonate to make 30 ccm. of a 1 per cent solution sodium bicarbonate, 0.15 gm sodium chloride 1 gm and novocaine 0.6 gm.

Caudal injections give very satisfactory anesthesia for urological examinations and treatment. The wall of the bladder is completely relaxed and the bladder distended. Such relaxation with absence of pain and straining permits the operator to carry out a thorough unhurried examination of the bladder and ureters.

In certain conditions, such as severe cystitis and pyelonephritis, caudal injections have been given in order to facilitate drainage of the renal pelvis. In one case ten such injections were given in seven weeks.

The reaction following cystoscopy in severe cases of cystitis is frequently due to voluntary muscle spasm around the cystoscope, especially in the region of the neck of the bladder this does not occur after sacral anesthesia. In a number of cases of pyelonephritis and severe cystitis in which periodic renal lavage was given the treatment was at first carried out under caudal anesthesia but later merely with urethral cocaineization. The convalescence in these cases was invariably much smoother and easier when caudal anesthesia was used. In several instances, patients refused to submit to cystoscopy without caudal anesthesia.

LOUIS GROSS, M.D.

Wideroe, S., and Dahlstrom, S. The Dangers of Lumbar Anesthesia (Les dangers de l'anesthésie lombaire). *Acta chir. scand.* 1924 17:7

A review of the literature on intraspinal lumbar anesthesia reveals the fact that of all the dangers associated with the method, respiratory paralysis is the most common and most frequently fatal. Such paralysis may occur immediately after the injection or hours or days later.

Air or various dyes injected into the spinal canal in the lumbar area reach the cerebral ventricular system within a few minutes. The authors believe that the drug injected for anesthesia reaches the fourth ventricle and produces a depressant effect upon the respiratory center.

LOYAL E. DAVIS, M.D.

SURGERY OF THE HEAD AND NECK

HEAD

Zelrowski, A. Malignant Tumor of the Temporal Bone. *Ann. Otol. Rhinol. & Laryngol.* 1922 31:139

Malignant tumors of the temporal bone are exceedingly rare. The author has had three such cases. In the third case a radical mastoid operation was performed for chronic otitis media and mastoiditis. The rapid growth of the tumor and subsequent death. The history of this case is reported in detail.

At autopsy a diagnosis of cancer originating in the epidermis of the middle ear was made. Metastases was limited to the glands in the immediate vicinity of the temporal bone.

In none of the cases reported by the author was a radical mastoid operation successful, and only two cases reported in the literature were cured by this procedure.

Early total resection of the temporal bone including the pyramid, has been performed in three cases, successful result being obtained in one. The most difficult step in this procedure is the freeing of the dura.

The author recommends a radical mastoid operation with ligation of the carotid artery and the jugular veins and removal of the glands to be followed several days later by a second operation for the removal of the entire temporal bone.

MARCEY H. HOWARD, M.D.

Sachs, R. I. Shall We Decompress for Choked Disk? *Arch. Neurol. & Psychiat.* 10: 3, vii 33

Of late years Sachs has lost faith in the efficacy of decompression for choked disk.

One hundred and forty brain tumors were studied. Of these forty five were completely unlocalized and ninety five localized during the period of examination. The table shows the relationship of choked disk to the site of the tumor.

CHOKED DISK IN VARIOUS LOCATIONS

	number of cases	Choked disk	%
Frontal			
1. Frontal			
2. Frontal			
3. Frontal			
4. Frontal			
5. Frontal			
6. Frontal			
7. Frontal			
8. Frontal			
9. Frontal			
10. Frontal			
11. Frontal			
12. Frontal			
13. Frontal			
14. Frontal			
15. Frontal			
16. Frontal			
17. Frontal			
18. Frontal			
19. Frontal			
20. Frontal			
21. Frontal			
22. Frontal			
23. Frontal			
24. Frontal			
25. Frontal			
26. Frontal			
27. Frontal			
28. Frontal			
29. Frontal			
30. Frontal			
31. Frontal			
32. Frontal			
33. Frontal			
34. Frontal			
35. Frontal			
36. Frontal			
37. Frontal			
38. Frontal			
39. Frontal			
40. Frontal			
41. Frontal			
42. Frontal			
43. Frontal			
44. Frontal			
45. Frontal			
46. Frontal			
47. Frontal			
48. Frontal			
49. Frontal			
50. Frontal			
51. Frontal			
52. Frontal			
53. Frontal			
54. Frontal			
55. Frontal			
56. Frontal			
57. Frontal			
58. Frontal			
59. Frontal			
60. Frontal			
61. Frontal			
62. Frontal			
63. Frontal			
64. Frontal			
65. Frontal			
66. Frontal			
67. Frontal			
68. Frontal			
69. Frontal			
70. Frontal			
71. Frontal			
72. Frontal			
73. Frontal			
74. Frontal			
75. Frontal			
76. Frontal			
77. Frontal			
78. Frontal			
79. Frontal			
80. Frontal			
81. Frontal			
82. Frontal			
83. Frontal			
84. Frontal			
85. Frontal			
86. Frontal			
87. Frontal			
88. Frontal			
89. Frontal			
90. Frontal			
91. Frontal			
92. Frontal			
93. Frontal			
94. Frontal			
95. Frontal			
96. Frontal			
97. Frontal			
98. Frontal			
99. Frontal			
100. Frontal			
101. Frontal			
102. Frontal			
103. Frontal			
104. Frontal			
105. Frontal			
106. Frontal			
107. Frontal			
108. Frontal			
109. Frontal			
110. Frontal			
111. Frontal			
112. Frontal			
113. Frontal			
114. Frontal			
115. Frontal			
116. Frontal			
117. Frontal			
118. Frontal			
119. Frontal			
120. Frontal			
121. Frontal			
122. Frontal			
123. Frontal			
124. Frontal			
125. Frontal			
126. Frontal			
127. Frontal			
128. Frontal			
129. Frontal			
130. Frontal			
131. Frontal			
132. Frontal			
133. Frontal			
134. Frontal			
135. Frontal			
136. Frontal			
137. Frontal			
138. Frontal			
139. Frontal			
140. Frontal			
141. Frontal			
142. Frontal			
143. Frontal			
144. Frontal			
145. Frontal			
146. Frontal			
147. Frontal			
148. Frontal			
149. Frontal			
150. Frontal			
151. Frontal			
152. Frontal			
153. Frontal			
154. Frontal			
155. Frontal			
156. Frontal			
157. Frontal			
158. Frontal			
159. Frontal			
160. Frontal			
161. Frontal			
162. Frontal			
163. Frontal			
164. Frontal			
165. Frontal			
166. Frontal			
167. Frontal			
168. Frontal			
169. Frontal			
170. Frontal			
171. Frontal			
172. Frontal			
173. Frontal			
174. Frontal			
175. Frontal			
176. Frontal			
177. Frontal			
178. Frontal			
179. Frontal			
180. Frontal			
181. Frontal			
182. Frontal			
183. Frontal			
184. Frontal			
185. Frontal			
186. Frontal			
187. Frontal			
188. Frontal			
189. Frontal			
190. Frontal			
191. Frontal			
192. Frontal			
193. Frontal			
194. Frontal			
195. Frontal			
196. Frontal			
197. Frontal			
198. Frontal			
199. Frontal			
200. Frontal			
201. Frontal			
202. Frontal			
203. Frontal			
204. Frontal			
205. Frontal			
206. Frontal			
207. Frontal			
208. Frontal			
209. Frontal			
210. Frontal			
211. Frontal			
212. Frontal			
213. Frontal			
214. Frontal			
215. Frontal			
216. Frontal			
217. Frontal			
218. Frontal			
219. Frontal			
220. Frontal			
221. Frontal			
222. Frontal			
223. Frontal			
224. Frontal			
225. Frontal			
226. Frontal			
227. Frontal			
228. Frontal			
229. Frontal			
230. Frontal			
231. Frontal			
232. Frontal			
233. Frontal			
234. Frontal			
235. Frontal			
236. Frontal			
237. Frontal			
238. Frontal			
239. Frontal			
240. Frontal			
241. Frontal			
242. Frontal			
243. Frontal			
244. Frontal			
245. Frontal			
246. Frontal			
247. Frontal			
248. Frontal			
249. Frontal			
250. Frontal			
251. Frontal			
252. Frontal			
253. Frontal			
254. Frontal			
255. Frontal			
256. Frontal			
257. Frontal			
258. Frontal			
259. Frontal			
260. Frontal			
261. Frontal			
262. Frontal			
263. Frontal			
264. Frontal			
265. Frontal			
266. Frontal			
267. Frontal			
268. Frontal			
269. Frontal			
270. Frontal			
271. Frontal			
272. Frontal			
273. Frontal			
274. Frontal			
275. Frontal			
276. Frontal			
277. Frontal			
278. Frontal			
279. Frontal			
280. Frontal			
281. Frontal			
282. Frontal			
283. Frontal			
284. Frontal			
285. Frontal			
286. Frontal			
287. Frontal			
288. Frontal			
289. Frontal			
290. Frontal			
291. Frontal			
292. Frontal			
293. Frontal			
294. Frontal			
295. Frontal			
296. Frontal			
297. Frontal			
298. Frontal			
299. Frontal			
300. Frontal			
301. Frontal			
302. Frontal			
303. Frontal			
304. Frontal			
305. Frontal			
306. Frontal			
307. Frontal			
308. Frontal			
309. Frontal			
310. Frontal			
311. Frontal			
312. Frontal			
313. Frontal			
314. Frontal			
315. Frontal			
316. Frontal			
317. Frontal			
318. Frontal			
319. Frontal			
320. Frontal			
321. Frontal			
322. Frontal			
323. Frontal			
324. Frontal			
325. Frontal			
326. Frontal			
327. Frontal			
328. Frontal			
329. Frontal			
330. Frontal			
331. Frontal			
332. Frontal			
333. Frontal			
334. Frontal			
335. Frontal			
336. Frontal			
337. Frontal			
338. Frontal			
339. Frontal			
340. Frontal			
341. Frontal			
342. Frontal			
343. Frontal			
344. Frontal			
345. Frontal			
346. Frontal			
347. Frontal			
348. Frontal			
349. Frontal			
350. Frontal			
351. Frontal			
352. Frontal			
353. Frontal			
354. Frontal			
355. Frontal			
356. Frontal			
357. Frontal			
358. Frontal			
359. Frontal			
360. Frontal			
361. Frontal			
362. Frontal			
363. Frontal			
364. Frontal			
365. Frontal			
366. Frontal			
367. Frontal			
368. Frontal			
369. Frontal			
370. Frontal			
371. Frontal			
372. Frontal			
373. Frontal			
374. Frontal			
375. Frontal			
376. Frontal			
377. Frontal			
378. Frontal			
379. Frontal			
380. Frontal			
381. Frontal			
382. Frontal			
383. Frontal			
384. Frontal			
385. Frontal			
386. Frontal			
387. Frontal			
388. Frontal			
389. Frontal			
390. Frontal			
391. Frontal			
392. Frontal			
393. Frontal			
394. Frontal			
395. Frontal			
396. Frontal			
397. Frontal			
398. Frontal			
399. Frontal			
400. Frontal			
401. Frontal			
402. Frontal			
403. Frontal			
404. Frontal			
405. Frontal			
406. Frontal			
407. Frontal			
408. Frontal			
409. Frontal			
410. Frontal			
411. Frontal			
412. Frontal			
413. Frontal			
414. Frontal			
415. Frontal			
416. Frontal			
417. Frontal			
418. Frontal			

our all his life. Mastoiditis developed some time after blow on the ear followed by exposure to cold wind five days later. Operations on the mastoid and cerebellar region resulted in complete recovery.

In the case of temporosphenoidal abscess the condition was due to chronic otitis media. Operation was followed by death. Autopsy revealed a large abscess.

In conclusion the author states that brain abscesses can be detected by repeated careful neurological examinations and that every patient should be given such an examination before he is subjected to radical mastoid operation.

MARCON H. HOBART, M.D.

New, G. B. The Delayed Pedicle Flap in Plastic Surgery of the Face and Neck. *Minnesota Med J* 9 2, 7.

The pedicle flap found most satisfactory by New is the so called delayed flap which he first saw used by Blair. Dr. New claims that Croft first advocated the application of this flap. It is employed also by Tagliacozzi.

The delayed flap is outlined and elevated from the surrounding tissue as if it were to be transferred, but is then returned to its wound and resutured in its original bed. The sutures are separated sufficiently to allow coaling between them. Firm pressure is applied by means of gauze and adhesive plaster for at least a week to hold the flap in place and to prevent the collection of blood or serum under it.

If the length of the flap makes the blood supply to the distal end questionable the flap may be left attached at both ends and the distal pedicle cut off in a week or ten days. The cutting of the pedicle should be done a little at a time rather than all at once. In ten days or two weeks from the time the flap is first elevated it may be transferred to the defect. This is readily accomplished without anesthesia, the area around the defect alone requiring excruciation. Although the method necessitates an additional step in the operation, it insures the blood supply and usually prevents the loss of any of the distal end of the flap.

The use of the delayed flap is recommended by the author also for the closure of non-operative openings in the palate and for the closure of wide cleft palate.

Where the delayed flap is transferred the skin is thin and flattened like normal skin. Therefore the dissection of the core of the tissue as in the tubed flap of Gillies is unnecessary. If a double epithelialized flap is required to fill a defect in the nose or cheek.

Thiersch graft, with its raw surface up, may be placed in the wound where the flap has been elevated. In suturing the flap the needle is passed first through the flap, then through the Thiersch graft, and then through the margin of the skin.

The results of this method of treatment are shown by several illustrations.

NECK

Dubs, J. Clinical Experiences in 840 Operations for Goiter with Special Consideration of Recurrent Goiters and Operations for Recurrence (Klinische Erfahrungen bei 840 Kropfoperationen mit besonderer Berücksichtigung der Kropf-Rezidive und Rezidiv-Operationen). *Schweiz med Wochenschr* 93 11, 90 93.

The author set himself the laborious task of going through the goiter material of the Kantonsspital Winterthur for the years 914 to 1921. During this time, 844 patients were operated on. In the first half of the period the unilateral operation was practiced almost exclusively but in the succeeding years the bilateral procedure was done with increasing frequency (5 unilateral and 58 bilateral operations).

For anesthesia, the second Eulenkrampf modification was used with the best results. In 260 strumectomies the wound was completely closed without drainage and in these cases there was less disturbance of wound healing than in the drained cases. If a sufficient capsular covering of the stump of the parenchyma cannot be achieved, the previously described muscle covering is used. This prevents not only the formation of a hematoma but also the formation of serum.

The thoracic hemipectomy of the thyroid gland in only seven cases. In one case cachexia thyrotoxa followed an operation performed by another surgeon. One case of postoperative tetany was cured by transplantation.

With regard to injuries of the recurrent nerve, Dubs states that every patient with goiter should be examined with the laryngoscope before operation and on discharge. In the cases reviewed the recurrent laryngeal nerve was not exposed in the dissection. Permanent lesions of this nerve resulted in 9 per cent. Squeezing injury of the nerve resulted in permanent paralysis in four cases in spite of the fact that the nerve was not cut and was grasped only momentarily.

The material of 194 to 1909 was studied with regard to the recurrence of goiter. Only cases in which the patient was re-examined (155) were included in the investigation. Every regrowth of the goiter which was visible and palpable was counted as a recurrence. Only 44.7 per cent of the patients were found free from recurrence.

Hemistruumectomy has been rejected in the author's vicinity because a recurrence develops in 67 per cent of the cases so treated. Even when the goiter is distinctly unilateral the unilateral operation is insufficient. Dubs believes that while the ligation of the four arteries does not prevent recurrence with absolute certainty, it limits it to great extent. He is unable to draw definite conclusions on this point from the cases he reviews, however, as only four of the patients who were subjected to ligation of all four arteries returned for examination.

Operations for recurrences were done in 6 per cent of the cases. More than half of the patients who were operated on once for recurrence developed another recurrence. Because of his conviction that there are goiters which cannot be entirely cured by surgery, Dubs recommends prophylactic treatment with iodine following operation.

HILLMAN (2)

Klose, H., and Hill, G. A. Recurrence of Goiter (Ueber Recidivierung) *Klin. Wochenschr.* 9, 1, 1935

The authors review from the standpoint of recurrence 11 cases of goiter operated upon by the classical methods and followed for five to eighteen years. A recurrence developed in 40 per cent and an operation for recurrence was performed in 33 per cent. Most of the recurrences developed between the twenty-first and twenty-fifth years of age.

Recurrence is dependent less upon the type of operation than upon the character of the goiter. The small nodular tumors and the diffuse colloid strumae show a particularly strong tendency to recur. According to the authors, the cause is too extensive resection in these forms of goiter. Therefore in the selection of the operative procedure the function of the thyroid must be taken into consideration. Resection should be as radical as possible in cases of hypersecretion and less extensive in cases of hyposecretion.

KOENIG (7)

Okada, H. The Treatment and Prognosis of Carcinoma of the Larynx. *Ann. Otol. Rhinol. & Laryngol.* 9, April, 30

An experience with over 400 cases extending over a period of twenty years, and a study of 4 cases operated upon constitute the basis of this very terse article.

1. Practically every early case of laryngeal cancer in which the disease is limited to nodular lesion of

the vocal cord and there was no involvement of the ventricular membrane or fixation of the cord, the author obtained permanent cure by endolaryngeal operation, with or without the use of suspension laryngoscopy. These cases, however, numbered only thirteen. Absence of involvement of the trachea is demonstrated by the use of the author's ventricular laryngoscope. After the tumor has been removed surgically the spot should be thoroughly cauterized with the galvanocautery or treated by an application of radium.

In all cases with involvement of the ventricular membrane or muscles, tracheotomy with a preliminary tracheostomy, as performed according to the suggestion of Chian and Semon but with only fair results.

Hemilaryngectomy and partial extirpation of the larynx, although indicated by the appearance and location of the tumor proved impractical. Most laryngeal carcinomata are too extensive for such simple procedures. Nothing less than a total extirpation of the larynx under strict asepsis has proved of any avail. The author removes the larynx from below upward, amputating below the ring cartilage by cutting straight upward from front to back. He then sews the lower tracheal end into the skin and completes the removal of the larynx, repairing torn tissues immediately. He removes also all regional lymph glands and ducts.

Of 106 cases operated upon in the manner described, many of which were not good surgical risks, thirty-six showed no recurrence after three years and fifty-five were cured. Of ten recurrences, three were cured by reoperation, the rest were glandular recurrences, some of which could have been clearly cured by reoperation. In six cases death resulted from other causes within four weeks after the operation.

Chloroform is the anesthetic of choice, but six cases were operated upon successfully under local anesthesia. M. COHEN, M.D.

SURGERY OF THE CHEST

CHEST WALL AND BREAST

Hild, J. K. Bleeding Breast (with Few Cases) Statistics from the Dr. Dirmann Hospital (Ueber blutende Mammas mit cancer kleinen Krebsstadien aus dem Krankenhaus Dr. Dirmann). *Verh. Dtsch. Ges. Gyn.* 9, 1934, 51

19 cases of bleeding breasts are reported. The first, a 31-year-old widow, 45 years old, the mother of four children, whose left nipple had secreted some what bloody to bloody serous fluid during the last half year. A tumor as demonstrable on palpation. The amputated breast showed dilated milk duct and a bean-shaped, pedunculated, papillomatous tumor beneath the nipple. Several smaller and similar intracanalicular tumors were seen in the vacuity. The microscopic examination showed

structure somewhat similar to that of adenocarcinoma, but without any infiltrating growth.

The second case, as that of a woman 35 years old, who had given birth to 5 children. The left nipple had dripped blood for six weeks and tumor the size of a nut had grown to the size of mandarin. Microscopic examination revealed carcinoma.

From 1891 to 1931, 11 cases of cancer and thirty-three cases of benign tumors of the breast were treated in the Dr. Dirmann Hospital. Among the cases of carcinoma there was only one with bleeding from the breast. In eight cases it was probable that benign tumor had undergone malignant degeneration. From 1891 to 1931 there were thirty cases of bleeding carcinoma in which the average period of observation of the tumor was fourteen months, while from 1931 to 1934 there were

thirteen cases with period of observation of nine months.

A bleeding breast is a rare condition. The bleeding may be vicarious menstruation or due to inflammation of the breast or a neoplasm. Benign tumors causing hemorrhage are cystadenomata and intracanalicular papillomata. Hemorrhage is frequently the only sign of the latter. Bleeding occurs in only 1 to 9 per cent of the cases of malignant breast tumors, but as malignant tumors are far more common than benign tumors, hemorrhage should suggest the presence of carcinoma.

If the cause of the bleeding is a neoplasm, the treatment should always be operative as a benign tumor may undergo malignant degeneration.

KORTMEYER (Z)

Lee B. J. The Treatment of Recurrent Inoperable Carcinoma of the Breast by Radium and the Roentgen Ray. *J Am Med Ass* 9 2, 1919, 574

This article reports the results of study of recurrent mammary cancer treated in a breast clinic during the years 9 8 9 9, and 9 90. Practically all of the 28 patients have been traced to the present date. The object of the study was to determine whether or not radiation treatment of recurrent carcinoma of the breast is justified by the results.

Only six of the 28 cases could be considered fairly as operable. Ninety four were so far advanced at the time of admission that they were obviously hopeless from the outset. Of the 24 patients in whom favorable results from irradiation might be expected, thirty-one (35 per cent) were alive at the time this report was written, and of these, the condition of twenty-two is good while that of nine is poor.

In the cases treated by irradiation following the appearance of recurrence, the average length of life after recurrence has been two years and four months. This compares very favorably with a series of cases observed at the New York Hospital. The length of life after recurrence following radical amputation without subsequent irradiation was six and one-half months. While the author is cognizant of the varying course of different types of breast cancer, he believes that the results cited indicate that irradiation is of definite value.

In general, the more cellular the tumor, the better its response to treatment by irradiation, and the younger the woman and the more rapid the recurrence, the poorer the result of irradiation.

Small localized lesions in the intracanalicular region or adherent to or in opening the chest wall, small localized skin metastases, and small accessible nodes are most amenable to treatment by radium. The recurrences which are best treated by the roentgen ray include diffuse cutaneous involvement, the so-called inflammatory carcinoma, extension of involvement of nodes in the axillary or supraclavicular regions, mediastinal and pleural metastases and bony metastases.

A study of the cases in this series leads the author to the following conclusions:

1 A careful selection of patients for operation must be made as a precaution against the recurrence of breast carcinoma.

2 Pre-operative and postoperative cycles of roentgen-ray treatment are important prophylactic measures against recurrence.

3 A follow-up of every case of carcinoma of the breast operated on should be adopted as a routine.

4 Irradiation properly applied to recurrent breast carcinoma definitely prolongs life.

5 With more complete knowledge and better technique, further control of the recurrent phase of this disease may be expected.

ANDREW HARTUNG, M. D.

Sittenfeld, M. J. Does Radiation Enhance Post-operative Recurrence of Carcinoma of the Breast? *J Radiol* 9 11, 476

Surgical statistics indicate that surgery alone is far from satisfactory in the treatment of carcinoma of the breast. Over 70 per cent of the patients thus treated do not survive the five year period and most of those who do had early localized tumors without glandular involvement at the time of operation. Of those with axillary or other lymph-node involvement less than 30 per cent survive the five-year period. It is the latter type of case particularly which should be given the benefit of whatever additional treatment may improve the ultimate results.

Marked discrepancy in the results reported by various authorities relative to radiotherapy plus surgery in the treatment of breast cancer induced the author to make a critical study of seventy three cases thus treated under his care. His clinical observations since the introduction of the modern technique of intensive radiation within the past twenty months has impressed it upon him that pre-operative or postoperative radiation with proper technique will greatly improve the end results. Of the seventy three cases, fifteen were given pre-operative radiotherapy and twenty three postoperative radiotherapy. Of these thirty six were arrested clinically and the other two were favorably influenced. Twelve cases of recurrence following operation showed clinical arrest of the condition in nine and no favorable influence in one. Two of the patients died. In fifteen cases there were distant metastases following the operation, three of these patients showed clinical arrest of the condition, three were not benefited, and nine died. Of eight patients who were inoperable when first seen four showed a clinical arrest of the condition, two were rendered operable, and two died.

From this brief clinical report it is obvious that though it has not given a clinical cure in every case pre-operative and postoperative radiation has exerted a most beneficial influence. The argument advanced by the advocates of postoperative radi-

up half pint of blood. The patient did not appear ill. In the lower right axilla and back there was percussion dullness associated with diminished vocal fremitus, harsh breath sounds, and prolonged expiration. There was no pain or dyspnea. The temperature was 102 degrees F, the pulse 120 and respiration 4. Hemoptysis occurred on three consecutive days. On the third day the breath became foul and the physical signs at the right base were more pronounced. The daily temperature ranged from 100 to 103 degrees F. The macro organism in the official sputum were chiefly streptococci and micrococci catarrhalis. A patch of pleuritic tenderness developed in the right base. The X-ray revealed no foreign body but showed an irregular opacity in the lower one-third of the right lung suggesting a cavity. The right chest scarcely moved with respiration. The patient gradually grew weaker and died twenty-seven days from the time of her admission to the hospital.

At autopsy the congested left lung showed collapsed patch near the apex. The right pleural cavity full of dark-brown, slimy fluid containing fragments of disintegrated lung. Only the lower part of the right lung remained and this was gangrenous except for few areas which were solid and gelatinous. There were no adhesions or enlarged lymph glands. A small sinus from the right side of the lower end of the esophagus led into the gangrenous mass in the right pleural cavity. No foreign body was found. The liver and myocardium showed cloudy flaccid.

Case 2 was that of a man aged 49 years who complained of dyspnea and pain in the right chest. During the past twenty years he had had bronchitis and emphysema and on several occasions had been

treated in a hospital. Five years previously he had had fits accompanied usually by hemoptysis and on one occasion by vomiting. There was always considerable sputum, which sometimes was blood stained but did not contain tubercle bacilli.

At the time of examination the patient's temperature was 100 degrees F, his pulse 100, and his respiration 33. Clubbing of the thumbs and advanced prostration were noted. The urine contained considerable quantity of albumin. Rales were heard over the entire chest, and expiration was prolonged.

The patient expectorated daily about 6 oz. of sputum which showed pus cells, streptococci, and micrococci catarrhalis. Six days after his admission to the hospital he had an attack of hemoptysis and died.

Autopsy revealed in the esophagus, opposite the bifurcation of the trachea, a small puckered area, across which narrow fibrous bands were stretched. Behind the bands a small opening led downward into the right bronchus just beyond the tracheal bifurcation. There was no sign of surrounding inflammation. The trachea and bronchi contained large quantity of coagulated blood. At the base of the right lung were dense pleural adhesions. The left lung was emphysematous and the lower lobe showed edema and congestion. The upper right lobe contained an abscess surrounded by consolidated and partly necrotic lung. Near this area were two granular particles which analysis showed to be cadmium (possibly a tooth filling). Elsewhere the lung tissue was congested but not consolidated. There was no tuberculosis. Both kidneys showed subacute glomerulonephritis.

WALTER C. BROWN, M.D.

SURGERY OF THE ABDOMEN

ABDOMINAL WALL AND PERITONEUM

Coyt, R. The Anatomy and Surgical Bearing of the Nerves Found in the Abdominal Wall. *Lancet*, 9, col. 693.

The anatomical distribution of the abdominal nerves leads to areas where abdominal closure can be made with little danger of nerve injury. In entering the abdominal wall the nerves lead a space of 4 in. above the first trunk on each side. There is no large nerve, an ideal space for the incision for gall bladder operation. The incision may be made obliquely from the inner costovertebral angle for a distance of 4 in. without danger of injuring any large nerve. If necessary it may be continued outward in further in which case only one nerve trunk, the eleventh intercostal, will be cut.

After passing the rectus sheath on its outer border the nerve passes into the rectus muscle near its center. Therefore the incision may be made vertically through the inner half of this muscle without injury to the nerve. Such an incision may be

used for appendectomy. Because of the almost horizontal position of the low nerves, the appendix can be approached also through an incision beginning near the antero-superior spine and curving upward and downward in the form of a crescent.

Excellent exposure for pyelotomy can be obtained without nerve injury by making on the left side an incision similar to that for gall bladder operation and vertical incision from it inner end down the midline of the abdomen.

MARSH H. HENRY, M.D.

Wooden, R. R. Medical Operation for Femoral Hernia with the Aid of Active Muscular Closure (Radikaloperation des Scherkeffernschen Hernien mittels aktiver Muskelverschluss). *Praktische Chirurgie*, 1921, 1, 8.

In radical operation for (femoral) hernia Wooden's aim is to restore active muscular closure of the femoral ring. The region of the crural canal is exposed by a V-shaped incision with its apex over the pubic symphysis. After freeing and resection of

the hernial sac, a strip with a lateral base is dissected from Poupert's ligament, drawn under the pectineal muscle, and sutured to the symphysis. A row of sutures joining the lower border of Poupert's ligament to the pectineal muscle is then inserted. When the muscles of the abdomen or of the thigh are then brought into play, the femoral ring is closed by the restored pectineus abdominal muscle connection.

The author has operated successfully by this method ten times. PARKER (Z)

Heldendall, H. The Radical Operation for Inguinal and Femoral Hernia with Plastic Use of the Uterus through the Abdominal Cavity and Simultaneous Laparotomy for Another Condition (Die Radikale Operation von Leisten- und Schenkelhernien mittels plastischer Verwendung des Uterus an der Bauchhöhle aus, bei gleichzeitiger Laparotomie aus anderen Gründen). *Zentralbl. f. Gynäk.* p. 211, 22.

In accordance with the suggestion of Freund, the author utilizes the uterus in the operation for plastic closure of the femoral ring through the abdominal cavity. The uterus is mobilized by means of the vesico-uterine fold, pushed to the side, and sutured as pad in front of the internal femoral ring. As preliminary procedure the internal femoral ring is sutured, the hernial sac being left intact.

Scalpel methods for the treatment of femoral hernia through the abdomen were originated by Oehler, Madlener, and Meyer and are described for comparison. KATZ (Z)

Souttar, H. S. The Operative Treatment of Difficult Hernia. *Brit. Med. J.* p. 21, 22.

To close the orifice of a hernia Souttar uses thick fine silk which has been boiled for an hour in 1,000 mercury perchloride dried in a 1,000 solution of benzoxide in absolute alcohol, and then kept in sterile liquid paraffin. Lango used material prepared somewhat similarly for the construction of artificial tendons and ligaments. Silk thus treated is soft and flexible but retains its full tensile strength. When introduced into the tissues it does not cause irritation, and it has the curious property that although it is not absorbed, it is so entirely assimilated that the resulting structure closely resembles normal tendon or ligamentous, but possesses the great advantage that it will not stretch.

The closure of hernial orifices by this method is exceedingly simple. When peritoneal sac is present the margins are drawn together with care to retain portion of the sac. The method is quite satisfactory also for cases of hernia in which there is no true peritoneal sac as the surrounding tissues provide an adequate attachment the opening in the muscular abdominal wall being darned by interlacing strands of the silk from side to side of the aperture. The strands are arranged so as to form net with meshes about $\frac{1}{2}$ in square. An attempt is made to close the aperture by pulling the sides of the opening together the tension being only such

as will bring the margins to their normal anatomical position. H. A. McKNIGHT, M.D.

Denzer, B. S. The Diagnosis of Peritonitis and Peritoneal Transudates by Means of Abdominal Puncture with a Capillary Tube. *Arch. Pediat.* p. 722, 723, 720.

Because of the difficulties in the diagnosis of peritonitis in infants efforts were made by the author to devise an instrument which would demonstrate the presence of minute amounts of fluid in the peritoneal cavity. Through the shaft of a metal trocar cannula $\frac{1}{4}$ in long and with a 7-gauge bore he inserted glass tubing and then cut the tubing off so that it protruded 1 or 2 mm from the tip. When this trocar cannula is inserted through the abdominal wall a sudden release of pressure indicates when it has entered the peritoneal cavity. The trocar is then removed and the capillary tube inserted as far as it will go. Denzer says it is advisable to wait a few minutes and to turn the needle in various directions before concluding that there is no fluid.

In over a hundred taps done in this manner there were no complications. E. C. ROBERTSON, M.D.

Reichle. The Surgical Treatment of Peritonitis (Zur chirurgischen Behandlung der Peritonitis). *Zentralbl. f. Chir.* p. 212, 213, 207.

If the primary focus can be wholly removed the abdomen is entirely closed, even in the presence of exudate. It is washed out only if it contains a large quantity of gastro-intestinal contents. Mikulicz's tamponade is employed unless the surfaces can be entirely covered with peritoneum. Particular attention is paid to the cul-de-sac of Douglas. The abdomen is closed tightly around the gauze drain. In the total number of cases of appendicitis treated by the author—including cases of peritonitis—the mortality was 5 per cent, while in 150 cases of severe peritonitis with perforation (among which were ninety-seven late cases) it was 58.5 per cent.

Goebel, Borchard, Hufschmidt, and Melchior employ tamponade as little as possible and through narrow openings in the abdominal wall. Pende considers a 0.9 per cent sodium-chloride solution too irritating as a wash for the suppurated abdomen and recommends normal salt solution. Goebel, Hoffmann, and Rudolf advise enterostomy when necessary. Goetz emphasizes the fact that either escapes too rapidly and may favor postoperative adhesions. In cases of abscess of the cul-de-sac of Douglas, Rudolf introduces Pregl's solution through an abdominal drainage tube. He finds that this prevents the secretion of pus and favors rapid healing. The stomach is washed out. Brosmann reported the cases of 10 persons with acute peritonitis who came to the operating table in such a grave condition that he was able only to open the abdomen, drain the pus, and pour in 500 ccm of narcotic ether. A cure resulted in both instances.

SCHLITZ (Z)

GASTRO-INTESTINAL TRACT

Moppert, G. G. *Gastrointestinal Perforation of the Stomach, a Complication of Diaphragmatic Hernia* (La perforation de l'estomac par gangrène complication de la hernie diaphragmatique) *J. de chir.* 9, 22, 453

U If a perforated gangrenous stomach is forced as usual by the abdomen is opened free of it below it floats in peritoneal cavity filled with gastric contents. If the surgeon does not make thorough exploration he attributes the localized gangrene to a perforated ulcer, phlegmon, a volvulus or arterio-mesenteric compression, when the true cause may be a diaphragmatic hernia. In the latter event the solution is as follows:

The stomach becomes strangulated in hernial sac or through a hiatus of the diaphragm. Its all becomes gangrenous and perforated. The perforation is allowed the escape of gas the strangulation and incarceration cease, and the stomach falls back but the abdominal cavity discharging its contents through the perforation.

Moppert describes three clinical cases of gangrenous stomach due to diaphragmatic hernia. The first was that of a man aged 4 years who had congenital hiatal hernia of the diaphragm in which the stomach, omentum and spleen had probably been involved since intra uterine life. The patient was operated upon the day after he entered the hospital. The symptoms of peritonitis died.

The second case was a case of congenital diaphragmatic hernia in a girl of 7 years. The stomach was strangulated in the sac and had perforated and become freed. The patient also died following an operation.

The third case was that of a woman aged 8 years who had a congenital hernia and incarceration of the stomach with the symptoms of acute obstruction and perforation followed by incarceration and peritonitis due to the discharge of gastric contents into the peritoneal cavity. Death occurred six hours after operation.

In general, gastric perforation occurring in strangulated diaphragmatic hernia has been attributed to volvulus. In 300 diaphragmatic hernia Poy found twelve accompanied by volvulus of the stomach and in most cases this complicated by perforation. In thirty six cases he found no perforation of the stomach but demonstrated perforations of the transverse colon. In the three cases reported by Moppert there was no volvulus.

H. A. BEEBAE

Hallbertson, J. J. *A Fibroma of the Wall of the Stomach Adherent to an Ulcer on the Lesser Curvature* (Ein Fibrom der Magenwand verwachsen mit einem Geschwür an der kleinen Krümmung) *Wiener Medizinische Wochenschrift* 9, 2, 197, 937

Cancer and ulcer are among the most common lesions of the stomach, while gastric sarcoma and gastric lipoma are very rare. On the other hand,

fifty five cases of fibromyoma of the gastro-intestinal tract were reported during the year 1921.

The author describes the rare combination of gastric ulcer with fibroma of the stomach. The anamnesis caused by the fibroma led to the assumption that the tumor was partly responsible for the development of the ulcer. The author's opinion is the fact that the fibroma, as situated on the lower curvature, namely, on the gastric strait of Waldeyer justifies the assumption that it was the primary condition and the ulcer was secondary.

HOWE (2)

Delore, X. and Duquet, C. *Repeated Interventions in Gastric Carcinoma* (Des interventions multiples dans le cancer gastrique) *Rev. de chir. Par.* 9, 23, 359

The authors advocate secondary surgical intervention in cases of gastric carcinoma in such symptoms of stenosis of the artificial opening become manifest.

The gastro-enterostomy opening may become closed by involvement of its gastric side by the growth of mechanically by metastases in the transverse mesocolon or other structures immediately adjacent. Though the secondary operation is only palliative the authors believe the formation of a new opening is indicated to give as much relief as possible.

LOREAL E. D. MD

Clayton, O. *The Importance of Acidophilic in Surgical Practice* (L'importance des acides nella pratica chirurgica) *Rivista italiana di chir.* 1922, 1922, 241

When wounds take up definite location in the body their toxic products have very important effect upon the blood, the nervous system, the temperature, and the nutrition. Several investigators have found that in animals such toxic products may cause death.

Cygnon discusses in particular the secondary phenomena due to the disturbance of organs from their fixed locations and their migration caused by operations on the abdomen. Migration is almost always upward. Both ether and chloroform cause the detachment of organs from the intestinal mesos and free them free in the intestinal lumen. Common enteropathies may be complicated by symptoms due to organs, and the postoperative course in such cases is often similarly complicated. Cygnon has frequently observed such deviations from the normal in patients known to be carriers of organs. This phase often culminates in the vomiting of worms or their discharge in the feces. Twelve to twenty-four hours after operation there is periumbilical pain, and after forty-eight hours vomiting occurs. Such enteric disorders are in no way due to the primary lesion or the operative technique. The blood shows a decided eosinophilia sometimes higher than 50 per cent, the pulse is small and frequent, and there may be meteorism and diarrhea. The disturbance may persist for several days, and it is only by examination

of the omits that the surgeon can determine the cause of the condition. During the attack the intestine may or may not show an acute catarrh.

In some cases migrating ascarides cause perforation of the intestinal wall.

The conclusion drawn by the author is that patients with a history of worms should be given treatment for this condition before they are operated upon.

W. A. BARNES

Lane, W. A. On the Treatment of Non Malignant Affections of the Colon. *Lancet*, 9, 1900, 14.

Lane regards all abnormal conditions of the colon as the direct or indirect result of chronic intestinal stasis. He classifies them into three main groups, viz. cases of intestinal stagnation in which a reaction takes place and those in which reaction is altogether absent.

One group is characterized by the formation of bands to the colon. One band of importance forms at the right iliac crest, another below the gall-bladder, one at the splenic flexure, one at the left iliac crest, and one in the left iliac fossa. The first and last are the most important. Mention is made also of the so-called Lane kink, or band kinking the terminal ileum.

According to the author these bands are all evolutionary identical in origin, function, and structure, and due to the effort of the organism to meet an abnormal loading up of the bowel resulting from distal obstruction.

Another important development which arises not infrequently in consequence of the strain exerted by the loaded caecum is what Lane calls the controlling appendix, an appendix which acts as a ligament, having become attached by adhesions to the under surface of the mesentery behind the end of the ileum.

When the ileum and caecum drop into the pelvis the ileum is kinked abruptly over the anchored appendix and its lumen is more or less occluded. The kinking of the anchored appendix favors obstruction of the appendiceal lumen. The removal of such an appendix is followed by great benefit.

It is in this type of static colon that cancer of some portion of the gastro-intestinal tract commonly occurs.

The other extreme type of chronic intestinal stasis is characterized by complete absence of effort on the part of the organism to oppose the elongation and prolapse of the large bowel, no new acquired bands or membranes being formed. The pelvic colon becomes greatly elongated, forms many abrupt angles in the pelvis, and offers great resistance to the passage of solid material through it. In consequence, an infection of the mucous membrane of the proximal colon takes place producing colitis and its complications.

In cases of obstruction associated with the formation of bands the operation for the first and last kink, as Lane calls the kink in the left iliac fossa, consists in careful separation of the bands which

form the kink and the accurate apposition of the peritoneal edges if any are left deprived of serous covering. Other bands and a controlling appendix are then dealt with if present. If an ileal kink is found and the membrane is extensive, a drainage tube is put in because the acquired membrane contains infecting organisms.

In fat subjects another complication of obstruction with the formation of bands is diverticulitis. This may be met by inserting the divided end of the ileum into the pelvic colon. As in cases of colectomy, the patient should be instructed to secure three evacuations daily. In some cases colectomy offers the best results.

Tuberculous ulceration of the colon following obstruction is frequently limited to the proximal half. For this sequelae, either of the operations mentioned may be advisable.

In cases of disease of the colon without the formation of bands, auto-intoxication is the condition requiring attention. This is the result of infection of the contents of the small intestines. Such infection causes most serious degenerative processes in every tissue of the body and renders the subject liable to infection by other diseases. Shortening of the colon, colectomy or the uniting of the divided ileum to the pelvic colon is indicated when medical methods have failed.

A complication of the elongated large bowel is a chronic or acute volvulus. This should be corrected by operation. Lane has excised the volvulus and performed a colectomy for this complication. The same procedures may be applied to megacolon. Much the same treatment is advocated for severe cases of mucous and membranous colitis, but resorted to less frequently.

Cancer is the final condition following chronic intestinal stasis.

CARL R. STERNER, M.D.

Lockhart Mummery, J. P. The Treatment of Acute Obstruction from Cancer of the Colon. *Lancet*, 923, 1900, 7.

A small incision is made over the caecum and a knuckle of the cecum all drawn out and protected with gauze swabs. An opening is then made in the cecal wall with a knife, and a rubber drainage tube about $\frac{1}{4}$ in. in diameter is pushed into the caecum for 2 in. and stitched to the cecal wall with catgut, each stitch going through the wall of the tube and packing up the cecal wall $\frac{1}{4}$ in. away from the tube. When the sutures are tied, a cuff of cecal wall has been turned in. A purse-string suture is then inserted well away from the tube and tied so as to turn in more of the cecal wall. The ends of this suture are tied and brought through the deep fascia and peritoneum. One or two other sutures are then placed so as to fix the caecum at the point at which the tube enters to the deep surface of the abdominal wall, and the abdomen is sewed up around the tube. A wide collapsible rubber tube is tied to the end of the rubber drainage tube projecting from the dressings and carried to a pail under the bed. The tube

remains quite water-tight and gas-tight for as long as a week, and as the contents of the cecum are liquid, they drain readily through it; no leakage takes place in the wound and the patient is kept dry and comfortable.

After the obstruction has been relieved and all signs of peritonitis have disappeared—generally in five or six days—the abdomen is opened in the mid line or on the left side, and the cause of the obstruction ascertained and dealt with under the most favorable circumstances.

These openings close in a week or ten days and most of them do not leak after the tube has come away. If the cecum is not distended, exploration is called for as the obstruction is in the small bowel.

CARL R. STERNER, M.D.

Fansler W. A. A Scalping Operation for Abscesses About the Rectum. *J. Laryng.* 9, 1914, 567.

A substantial percentage of perirectal abscesses have connection with the bowel complete fistulae being formed when they are opened.

Whether a bowel opening is present or not, the best treatment is early and radical incision, the wound being kept wide open while the cavity is granulating from the bottom up and. If the wound is not kept open a deep cavity or sinus with a small external opening results which renders healing and medication difficult or impossible. A T or cross-shaped incision is preferable to simple straight incision.

To obtain wide-open wound the author recommends scalping the abscess. A liberal cross-shaped incision is made as near the anus as possible and the extent of the abscess cavity explored with the finger and probe. Removal of the four segments of the skin formed by the cross-shaped incision leaves a somewhat circular opening. In general, the circle of skin removed should be slightly larger than the greatest diameter of the abscess.

This method gives a truncated cone-shaped cavity with its base outward, which is easy to dress and to medicate to its depths. Frequently the use of nitric acid or 40 per cent silver nitrate solution will heal small openings into the bowel. If division of the sphincter is necessary later the patient will be in no worse condition than following an ordinary incision of the abscess, and the tract will be definitely defined.

In the author's experience the removal of the skin flap has not prolonged convalescence. By the time the wound has granulated from the bottom, the skin has contracted and healed down to meet it.

WALTER C. BRIDGES, M.D.

Penningson, J. R. Carcinoma of the Rectum and Pelvic Colon. Age- and Site-Incidence and Prophylaxis. *J. Am. Med. Ass.* 9, 1914, 849.

In 774 cases of carcinoma of the rectum the condition occurred between the ages of 4 and 70 in 75 per cent, and between the ages of 4 and 8 in the only

four cases. Carcinoma of the pelvic colon has been found in a boy of 9 years and in a girl of 12.

In 48 of a series of 570 cases the cancerous tumor was within reach of the examining finger. In the remainder it was higher up in the bowel or at the rectosigmoid junction. The anterior wall of the bowel is generally involved. More frequent rectal examinations are necessary to discover this condition early.

Internal palpation, with or without proctoscopy and sigmoidoscopy is our chief reliance in the diagnosis because none of the serum or other tests so far introduced has proved reliable. Bleeding, pain, and diarrhea are not early signs of carcinoma of the rectum, but the evidence of considerable damage already done. The laity must be educated to get rid of any ailment which favors the development of cancer.

PATRICK W. SWARTZ, M.D.

LIVER, GALL-BLADDER, PANCREAS, AND SPLEEN

Bodnar L. Cholecystitis Cystica (Cholecystitis Cystica). *Arch. f. path. Anat.* 91, 1914, 139.

The author describes the autopsy findings in the case of a woman 60 years old who was operated on for strangulation hernia and died from hypostatic pneumonia.

The gall bladder contained 10 faceted concretions. When opened, it was 7.5 cm. long, 1 cm. wide and about 7 to 14 cm. thick. At the cut surface the mucosa was thickened, the thickness varying in different areas. Within the wall of the gall bladder, and particularly in the muscle layer, the sections showed numerous, very minute, spherical, smooth-walled spaces and also larger ones up to 4 mm. in diameter some of which are located just under the serosa. These spaces were lined by high cylindrical cells with longitudinally oval nuclei and goblet cells.

In the examination of the serial sections it was observed that all of the cavities, including those which appeared closed on all sides, opened into the lumen of the gall-bladder between the folds of the mucous membrane. In the wall of the gall-bladder there were also changes characteristic of the chronic cholecystitis which had run its course.

Bodnar believes that most of the cystic cavities had their origin in the Luschka ducts and that only some of the small ones in the region of the large spaces may be regarded as mucous glands changed by disease. The dilation of the Luschka ducts must be explained as resulting from an abnormally deep growth of their epithelial lining in addition to passive distention the latter is responsible alone only in the peripheral parts of the cavities.

In addition to inflammatory irritation, peculiar capacity of the epithelium of the Luschka ducts to proliferate must also be assumed as an etiological factor. It is possible that the findings described are characteristic of precancerous stage. BROSCH (2).

Morrison, R. The Diagnosis and Treatment of Cholelithiasis. *Bull M J* 92 005

Of the many theories advanced to explain the formation of gall stones the most universally popular has been that which attributes it to infection of the gall-bladder. Some predisposing causes are more common than others. Among the former are repeated pregnancies, obesity and a sedentary life. In the author's experience the most frequent cause is insufficiency of fluid intake.

The subjective symptom on which a diagnosis of gall stones can be based reasonably is severe pain referred to the epigastrium. This is often very sudden in onset, in some cases lasts only a few moments and in others for hours, and catches the breath before inspiration is complete.

A tender area over the gall bladder on deep palpation during forced inspiration, discovered during the attack of the characteristic pain and lasting for time after it, is a reasonably reliable indication of gall stones, the diagnosis based upon it proving correct in eight cases out of ten.

A gall bladder tumor or jaundice preceded by typical attack of pain is usually a positive clinical indication.

There is only one reasonable treatment, viz. operation. In the author's opinion, cholecystomy is the best operation when the cystic duct is patent.

If the gall bladder shows serious infection it should be opened freely the stones removed and the gall bladder walls and interior carefully inspected. Unless the gall bladder is so obviously diseased that recovery seems impossible it should not be removed. If infected, it should be drained. If bile discharges freely the tube should not be kept in for more than a few days and never for more than two weeks.

If the gall bladder is so severely diseased that recovery seems impossible it may be dealt with by cholecystectomy or the thermocautery.

The author believes that in calculous cholecystitis the removal of the stones may be all that is necessary but for primary cholecystitis, the operation of election may be cholecystectomy.

H A McK. read M D

Willems, C. The Technique of Exposing the Biliary Passages (Technique de la découverte des voies biliaires). *Arch. franco-belges de chir.* 922, xxv 834

Willems refers to the danger of vertical incisions. Vertical incisions near the border of the rectus cut a certain number of the terminal branches of the lumbar nerves supplying the muscle walls, causing unilateral paralysis. Transverse incisions are much less dangerous and when they are exactly sutured and heal by primary intention do not impair the muscle function. Willems has used such incisions for long time. The lumbar region being raised by cushion, the incision is begun near the median line, extended outward and obliquely along the costal border one or two fingerbreadths below the ribs, about the site of the lower border of the liver and continued to a point in the flank which is determined by the condition anticipated. It cuts through the right rectus, the obliquus major, the obliquus minor, the transverse, and, in its terminal part, the anterior fibers of the great dorsal muscle. The muscular bed traversed is therefore thick and formed of several planes.

If the liver is free from adhesions its lower edge rises into the wound when the abdomen is opened. If adhesions prevent this, they are detached. The liver is then basculated on the edge of the thorax to expose its lower surface. This is accomplished with the help of a special assistant wearing thread gloves over rubber gloves. The bascultation greatly facilitates the approach to the biliary tract, the performance of cholecystectomy, catheterization, the extraction of calculi, and hepatic drainage.

W A REXFORD

SURGERY OF THE EXTREMITIES

CONDITIONS OF THE BONES, JOINTS, MUSCLES, TENDONS, ETC

Meichler, E. A Peculiar Form of Tumor Like Osteomyelitis (Eine Sonderform der "tumorigen Osteomyelitis"). *Med. Klin.* 93 xviii 305

This is a brief report of a case of osteomyelitis of the left thigh following influenza in a man 39 years of age. The onset was gradual and the disease was localized within narrow limits. A cortical sequestrum which was formed remained in situ during the entire course of the condition. The clinical picture was dominated by massive, soft granulation tissue which involved chiefly the extensor muscles. The tumor-like character of this tissue was so pronounced that only after its radical extirpation and the dis-

covery of the sequestrum was it possible to exclude sarcoma and to make a correct diagnosis.

LANGE (Z)

Baker, C. F. Report of an Unusual Foreign Body in the Arm. *Am J Surg.* 93 ix, 727

The patient, a woman, fell on the ice. The accident caused entire loss of function at the elbow and a small wound on the posterior surface of the forearm, just below the joint. The diagnosis made was traumatic injury of the elbow with possibly a compound fracture or a dislocation. The presence of a fracture was suggested by the projection of a small piece of bone from the wound. The surgeon in charge stated that he was positive as to the presence of a bone lesion as he had pressed

INTERNATIONAL TREATY OF SUPPLY

Article 1. The High Contracting Parties, desiring to secure the most efficient and economical supply of the necessities of life to the civilian population of all countries, and to the armed forces of the High Contracting Parties, have agreed to conclude this Treaty.

FRAGMENTS AND DISLOCATIONS

Article 2. The High Contracting Parties, in order to secure the most efficient and economical supply of the necessities of life to the civilian population of all countries, and to the armed forces of the High Contracting Parties, have agreed to conclude this Treaty.

Article 3. The High Contracting Parties, in order to secure the most efficient and economical supply of the necessities of life to the civilian population of all countries, and to the armed forces of the High Contracting Parties, have agreed to conclude this Treaty.

Article 4. The High Contracting Parties, in order to secure the most efficient and economical supply of the necessities of life to the civilian population of all countries, and to the armed forces of the High Contracting Parties, have agreed to conclude this Treaty.

Article 5. The High Contracting Parties, in order to secure the most efficient and economical supply of the necessities of life to the civilian population of all countries, and to the armed forces of the High Contracting Parties, have agreed to conclude this Treaty.

Article 6. The High Contracting Parties, in order to secure the most efficient and economical supply of the necessities of life to the civilian population of all countries, and to the armed forces of the High Contracting Parties, have agreed to conclude this Treaty.

Article 7. The High Contracting Parties, in order to secure the most efficient and economical supply of the necessities of life to the civilian population of all countries, and to the armed forces of the High Contracting Parties, have agreed to conclude this Treaty.

Article 8. The High Contracting Parties, in order to secure the most efficient and economical supply of the necessities of life to the civilian population of all countries, and to the armed forces of the High Contracting Parties, have agreed to conclude this Treaty.

Article 9. The High Contracting Parties, in order to secure the most efficient and economical supply of the necessities of life to the civilian population of all countries, and to the armed forces of the High Contracting Parties, have agreed to conclude this Treaty.

Article 10. The High Contracting Parties, in order to secure the most efficient and economical supply of the necessities of life to the civilian population of all countries, and to the armed forces of the High Contracting Parties, have agreed to conclude this Treaty.

SURGERY OF THE BONES, JOINTS, MUSCLES, TENDONS, ETC

Greenstein, F. Paralysis of the Shoulder Girdle (Paralyse de la ceinture scapulaire). *Arch. franc.-belges d. k.* 9: 1, 227, 95.

The case reported was that of a girl 15 years old about the age of 7 years, had an illness which was followed by temporary paralysis of the arms and legs and permanent paralysis and atrophy of the left deltoid muscles and the right shoulder girdle. Abduction the only active movement possible in the right arm caused forward luxation of the humerus. X-ray examination of the glenoid cavity and the head of the humerus showed a condition somewhat analogous to that in congenital dislocation of the hip due to a shallow acetabulum.

Although doubtful of the result the author risked an edonomuscula transplantation. He ligated the tendon of the pectoralis major placed the supra-scapular muscle tendons, sutured the tendon of the pectoralis minor to that of the supra-scapular detached the deltoid from its clavicular and acromioclavicular attachment and sutured it to the trapezius and completed the operation by an anterior capsulorraphy. The arm then kept in abduction and external rotation in plaster cast for 4 weeks.

When the cast removed the patient was able to make movements of the arm which were impossible before the operation, but a few days the luxation recurred and it was found that the humeral head had again slipped from the glenoid cavity. Six months later the luxation was reduced by operation arthrodesis followed by a second arthroplasty as done and the arm again immobilized. The final result was excellent.

W. A. B.

SURGERY OF THE SPINAL COLUMN AND CORD

Cohen, I. A Case of Backward Luxation of the Seventh Cervical Vertebra with Isolated Compression of Nerve Root. *Arch. franc.-belges d. k.* 10: 1, 15, 1917.

In 1911 there were three cases of luxation of cervical vertebrae collected in a book by Henle there were no more symptoms in eight temporary cervical compression and persistent partial paralysis in 1. Cohen's case began as followed by total paralysis of the right arm with intense pain and emaciation and atrophy of the right hand. Examination of the spine three months later revealed a dislocation between the sixth and seventh cervical vertebrae and the X-ray showed backward luxation of the seventh cervical vertebra. The cerebrospinal fluid was normal. Manual reduction was attempted without success.

The compressed and lacerated motor and sensory roots of the eighth cervical nerve were removed by the seventh

Orell, S. A Prosthesis for the Thumb (Eine Daumenprothese). *Arch. franc.-belges d. k.* 9: 1, 227, 95.

In an accident with a saw a man lost all the phalanges of the thumb and index finger and the proximal end of the second metacarpal bone. As he was not satisfied with the results of the operation which was done to remove the cicatrices and to deepen the fold between the thumb and index finger attempt was made to construct a prosthesis.

The best material for this kind of prosthesis is hard rubber. The phalanx of the apparatus was formed on the pattern of the phalangeal portion of the normal thumb with the aid of plastic material of the thumb, the metacarpus, and the carpal portion of the deformed hand as well as of the same part of the normal hand. From these negatives the appropriate orthopedic of the Zander Institute of Stockholm prepared plaster positives and negatives.

The phalangeal portion of the thumb was attached to the metacarpal joint of the semi-flexed finger. Hard rubber is suitable because of its elasticity and resistance to moisture and chemical and thermic influences, and because it may be colored as desired and its surface is not too hard or fragile. A suitable non-ductile metal wire was used as connecting joint between the hard rubber phalanx and the carpus so that motions between the carpus and metacarpus might be transferred to the rubber phalanx. The phalangeal portion of the thumb of a male corpse was found to weigh 25 gm. The thumb prosthesis described weighs 51 gm. The free point of the prosthesis bears a flexing load of over 5 kgm. like the normal thumb bears flexing load of more than 5 kgm. The author's thumb prosthesis meets not only the cosmetic but also the functional requirements. *Lohn. Verh. d. D. M. D.*

and eighth cervical roots. For six months following the accident the paralysis decreased spontaneously but at the end of this time the improvement ceased. The patient left the hospital refusing to permit an operation to liberate the compressed nerve roots.

W. A. B.

Frazier, C. H., and Spiller, W. G. An Analysis of Fourteen Connecticut Cases of Spinal Cord Tumor. *Arch. Neurol. & Psych.* 9: 18, 455.

In the cases reviewed the final diagnosis was not established until an average of 2 years had elapsed from the date of the initial symptoms. The time ranged from nine months to five years. Ten of the patients were women and four were men. Their ages ranged from 18 to 64 years. Ten were between 30 and 50 years of age.

Six of the tumors were extramedullary and subdural, two were extradural, one cranial, one in the vertebral column and one partial spinal and partly

Intracranial: Six level ed the cervical segments, three the upper thoracic segments, four the lower thoracic segments, and one the cauda equina.

In thirteen of the fourteen cases the first symptom was pain. In the single exception the tumor was extradural, and never caused pain. In the other cases the pain often occurred intermittently; intervals of days or months, and frequently was worse at night or in the early morning. In several instances it decreased specially at the onset of menarche.

Tble I indicates the time which elapsed between the onset of pain and the first signs of motor impairment.

TABLE 1 TIME BETWEEN PAIN AND FIRST SIGNS OF MOTOR IMPAIRMENT

Case	Duration of pain	Duration of motor impairment	Interval between onset of pain and motor impairment
1	years	years	years
2	years	years	years
3	years	years	years
4	years	years	years
5	years	years	years
6	years	years	years
7	years	years	years
8	years	years	years
9	years	years	years
10	years	years	years
11	years	years	years
12	years	years	years
13	years	years	years
14	years	years	years
15	years	years	years
16	years	years	years
17	years	years	years
18	years	years	years
19	years	years	years
20	years	years	years
21	years	years	years
22	years	years	years
23	years	years	years
24	years	years	years
25	years	years	years
26	years	years	years
27	years	years	years
28	years	years	years
29	years	years	years
30	years	years	years
31	years	years	years
32	years	years	years
33	years	years	years
34	years	years	years
35	years	years	years
36	years	years	years
37	years	years	years
38	years	years	years
39	years	years	years
40	years	years	years
41	years	years	years
42	years	years	years
43	years	years	years
44	years	years	years
45	years	years	years
46	years	years	years
47	years	years	years
48	years	years	years
49	years	years	years
50	years	years	years
51	years	years	years
52	years	years	years
53	years	years	years
54	years	years	years
55	years	years	years
56	years	years	years
57	years	years	years
58	years	years	years
59	years	years	years
60	years	years	years
61	years	years	years
62	years	years	years
63	years	years	years
64	years	years	years
65	years	years	years
66	years	years	years
67	years	years	years
68	years	years	years
69	years	years	years
70	years	years	years
71	years	years	years
72	years	years	years
73	years	years	years
74	years	years	years
75	years	years	years
76	years	years	years
77	years	years	years
78	years	years	years
79	years	years	years
80	years	years	years
81	years	years	years
82	years	years	years
83	years	years	years
84	years	years	years
85	years	years	years
86	years	years	years
87	years	years	years
88	years	years	years
89	years	years	years
90	years	years	years
91	years	years	years
92	years	years	years
93	years	years	years
94	years	years	years
95	years	years	years
96	years	years	years
97	years	years	years
98	years	years	years
99	years	years	years
100	years	years	years

In all cases there at least year had slipped in (we count two years, in the case between one and two years) and in those cases less than

Pain associated with atrophy in the root distribution of the upper limb should arouse the suspicion of a tumor but if the roentgen ray examination reveals no pathologic condition it is usually desirable to defer operation until clinical evidence of implication of the cord is noted. Exaggeration of the tendon reflexes of the lower limb, on the same side

the pain and atrophy of the upper limb, especially if associated with the Babinski reflex, is a combination that may justify early operation.

The second symptom in every case was a subjective sensory disturbance other than pain.

The Brown-Séquard syndrome is the classical syndrome of spinal tumors is represented as the second of the three cycles, the first being the root cycle and the third, paralysis of motor and sensory function. In only 1% of the authors' cases are there unilateral sensory phenomena, and these were not of the Brown-Séquard type.

Motor disturbances are present in greater or less degree in most cases. Table III shows the motor symptoms, the duration of the lesions, and the relation of the tumor to the cord.

TABLE III
MOTOR FLUCTUATION

Direction	Side	Location	Major innervation	Link
1 sample	Left	Intercostal	Somatic: paraspinal	
2 samples	Right	Intercostal	Somatic: paraspinal	Right leg
years	Posterior	Intercostal	Somatic: paraspinal	
years	Posterior	Intercostal	Somatic: paraspinal	
years	Left	Intercostal	Somatic: paraspinal	
years	Right	Intercostal	Somatic: paraspinal	Left leg
4 years	Posterior	Intercostal	Somatic: paraspinal	Right leg
years	Left	Intercostal	Somatic: paraspinal	
years	Right	Intercostal	Somatic: paraspinal	
months	Right	Intercostal	Somatic: paraspinal	Right and left legs
months	Left	Intercostal	Somatic: paraspinal	Left leg
months	Right	Intercostal	Somatic: paraspinal	Right leg
months	Posterior	Intercostal	Somatic: paraspinal	

In only 1 of the fourteen cases was there disability in the upper extremity. In seven cases both lower extremities were involved, and in the remainder only one. The development of motor disability was in most instances (nine out of fourteen) a matter of weeks or months. This is in rather striking contrast to the period of root pain, which averaged two years. In other words, when the tumor had increased sufficiently in size to cause cord compression the motor phenomena developed rapidly.

There are only five cases with the xanthochromia phenomenon: three the lesion was present in years four, six, three, one year and nine months respectively.

The Quackenbush test, the power test for small block, was not tried out in every case. This test is based upon the effect on the pressure in the lumbar puncture manometer when compression is made on the material popular. (18) A positive finding by either method should be regarded only as confirmatory evidence of the presence of a tumor since negative findings do not preclude the possibility of such lesions and positive findings have been noted in cases of lesions other than tumor.

In five cases there was difficulty in urination, and in one, occasional urinary incontinence. In three there was constipation, and in two bowel incontinence.

In the segmental diagnosis referred pain, sensory disturbances, muscle atrophy or impairment of muscle power and disturbed reflexes must be taken into consideration.

Table IV gives the relationship between the region to which pain was first referred and the level of the tumor.

TABLE IV.—RELATIONSHIP BETWEEN REGION TO WHICH PAIN WAS REFERRED AND LEVEL OF TUMOR

REGION OF PAIN	LEVEL OF TUMOR
Left shoulder	C 2 left
Right shoulder	C 2 left
Between shoulder	C 4 C 5 right
Between angle of scapula	C 4 right
Right and left arm	T 1 T 2 posterior
Anterior chest	T 2 T 3 right
Back	T 1 T 2 left
Posterior	T 1 T 2 posterior
Right leg	T 1 T 2 right
	Caudal

In one of the instances in which sweating of the face was recorded, it occurred before operation and in the other after operation.

The Babinski reflex was recorded as present in seven cases and absent in one.

Disturbances in the movement of the diaphragm are significant as localizing symptoms. It appears that the function of the diaphragm is not entirely dependent on the phrenic nerves.

When there has been no degenerative changes in the cord, complete restoration of function may be anticipated. In only two cases was there absolutely no return of function.

All of the tumors in this series of cases were extramedullary and the majority were endotheliomas or fibromas—tumors with definite encapsulation and limited increase in the dimensions of the canal.

In only one of the series was removal of the growth difficult; in this instance the tumor involved both the spinal canal and the posterior fossa. At least a third of the growth, firmly fixed fibroma, was below the foramen magnum. The patient died.

In every case the tumor was exposed by removing three or four spinous processes and laminae in only one case was it necessary to enlarge the opening. The cord may be pulled by traction on the dentate ligaments or gently dissected. There is no difficulty separating the cord from the tumor or the tumor from the cord. Only after the pia is divided is the line of demarcation clearly defined. Occasionally one root either the anterior or the posterior may be so incorporated in the tumor that its removal may be desirable. In four of the cases one posterior root was sacrificed and in another an anterior root.

The close adherence of the tumor to the dura makes it advisable to remove that section of the

dura to which the tumor is firmly attached. Hemorrhage from this area is quite free and can be controlled only by means of muscle grafts. With this exception, the operation is conducted in a bloodless field. After the removal of the growth, the dural wound should be closed with a continuous silk suture, and the muscle, perineuritic structures, subcutaneous tissue, and skin with tier sutures.

The history of each of the fourteen cases is given. The article contains twenty-one figures.

CARL R. STEINER, M.D.

Elberg, C. A., and Stookey, B.: The Mechanical Effects of Tumors of the Spinal Cord: Their Influence on Symptomatology and Diagnosis. *Arch. Neurol. & Psychiat.* 9, viii, 50.

Elberg and Stookey group tumors of the spinal cord as follows:

All growths on the posterior aspect of the cord, whether in the median line or lateral, but behind the posterior nerve roots, are classified as posterior growths. Those lying on the lateral aspect of the cord, in front of the posterior roots but behind the dentate ligament, are dorsolateral growths. Those which are lateral in front of the dentate ligament but behind the anterior roots, are ventrolateral growths. Those that lie on the anterior aspect of the cord, in the median line or more toward the mid but in front of the anterior roots, are anterior or ventral growths.

In their series of cases 64 per cent of the growths were dorsal or dorsolateral, and 36 per cent were ventral or ventrolateral.

TABLE I.—RELATION OF TUMORS TO THE SURFACES OF THE CORD (NOT INCLUDING THOSE BETWEEN THE ROOTS OF THE CAUDA EQUINA)

Location	Extramedullary	Intramedullary
Anterior and posterior		
Anterior and lateral		
Anteromedial		1
Posterior and median		
Posterior and lateral		
Posteriomedial		4
Lateral and posterior		
Lateral or around the cord		
Total	41	14

While pain is often absent, there are very few cases without some type of sensory disturbance as an early symptom.

In cases of ventral and ventrolateral growths subjective paresthesia is very frequent.

Tumors that lie on the ventrolateral or dorsolateral aspect of the cord are much more apt to give an early Brown-Séquard type of motor and sensory disturbance than tumors in other locations. If the disease began with root pains, the tumor usually was dorsolateral if, on the other hand, early root pains did not occur but there were early contralateral paresthesias, the growth usually lay on the ventrolateral aspect of the cord.

The mobility of the cord at various levels has decided influence on the symptoms and signs of an expanding lesion within the spinal canal.

TABLE II SENSORY SYMPTOMS AT ONSET

Symptoms	Extra and ultery	Extra dental	Canine and Crests	Extra- and ultery
1. Pain in neck or back	2			
2. Pain in neck or back				
3. Pain in neck or back				
4. Pain in neck or back				
5. Pain in neck or back				
6. Pain in neck or back				
7. Pain in neck or back				
8. Pain in neck or back				
9. Pain in neck or back				
10. Pain in neck or back				
11. Pain in neck or back				
12. Pain in neck or back				
13. Pain in neck or back				
14. Pain in neck or back				
15. Pain in neck or back				
16. Pain in neck or back				
17. Pain in neck or back				
18. Pain in neck or back				
19. Pain in neck or back				
20. Pain in neck or back				
21. Pain in neck or back				
22. Pain in neck or back				
23. Pain in neck or back				
24. Pain in neck or back				
25. Pain in neck or back				
26. Pain in neck or back				
27. Pain in neck or back				
28. Pain in neck or back				
29. Pain in neck or back				
30. Pain in neck or back				
31. Pain in neck or back				
32. Pain in neck or back				
33. Pain in neck or back				
34. Pain in neck or back				
35. Pain in neck or back				
36. Pain in neck or back				
37. Pain in neck or back				
38. Pain in neck or back				
39. Pain in neck or back				
40. Pain in neck or back				
41. Pain in neck or back				
42. Pain in neck or back				
43. Pain in neck or back				
44. Pain in neck or back				
45. Pain in neck or back				
46. Pain in neck or back				
47. Pain in neck or back				
48. Pain in neck or back				
49. Pain in neck or back				
50. Pain in neck or back				
51. Pain in neck or back				
52. Pain in neck or back				
53. Pain in neck or back				
54. Pain in neck or back				
55. Pain in neck or back				
56. Pain in neck or back				
57. Pain in neck or back				
58. Pain in neck or back				
59. Pain in neck or back				
60. Pain in neck or back				
61. Pain in neck or back				
62. Pain in neck or back				
63. Pain in neck or back				
64. Pain in neck or back				
65. Pain in neck or back				
66. Pain in neck or back				
67. Pain in neck or back				
68. Pain in neck or back				
69. Pain in neck or back				
70. Pain in neck or back				
71. Pain in neck or back				
72. Pain in neck or back				
73. Pain in neck or back				
74. Pain in neck or back				
75. Pain in neck or back				
76. Pain in neck or back				
77. Pain in neck or back				
78. Pain in neck or back				
79. Pain in neck or back				
80. Pain in neck or back				
81. Pain in neck or back				
82. Pain in neck or back				
83. Pain in neck or back				
84. Pain in neck or back				
85. Pain in neck or back				
86. Pain in neck or back				
87. Pain in neck or back				
88. Pain in neck or back				
89. Pain in neck or back				
90. Pain in neck or back				
91. Pain in neck or back				
92. Pain in neck or back				
93. Pain in neck or back				
94. Pain in neck or back				
95. Pain in neck or back				
96. Pain in neck or back				
97. Pain in neck or back				
98. Pain in neck or back				

The reversed Brown Sequard syndrome as noted in six cases operated on. This is explained as follows. When the growth has reached certain size and before actual pressure on the cord by the tumor has occurred, the cord has changed its position and lies against the dura and the bony wall of the canal on the side opposite that of the tumor. T-6 diagrams are shown to explain this condition.

In ten of the patients the symptoms and signs of the spinal compression were aggravated after fluid had been withdrawn by lumbar puncture. Three had extradural growths, and six had intradural growths firmly adherent to the dura. In one case the record was incomplete. The authors believe that if the symptoms and signs of motor and sensory disturbance be those more marked after lumbar puncture, there

removal of fluid, the diagnosis that the growth is extradural or intradural and adherent to the inner surface of that membrane is justified.

The conclusions drawn are summarized as follows:
1. Tumors on the anterior and anterolateral aspects of the spinal cord are relatively frequent, constituting about one third of the cases.

Although many patients with spinal cord trauma have no pain at the onset, the large majority have some subjective sensory disturbance as an early symptom.

3 In some cases objective sensory disturbances are absent for long periods and appear only after lumbar puncture.

4 Tingling, coldness, burning, and other paresthesias are not rare in cases of extracardiac atherosclerosis.

5. If the twisting occurs in the contralateral limb and below the level of the growth, it is probable that the tumor lies on the ventrolateral aspect of the cord.

6 Intradural tumors adherent to the dura and extradural grow the not infrequently press the cord to the opposite side of the spinal canal and cause early motor symptoms on the side of the body opposite that of the tumor.

2 If the signs of motor and sensory disturbances become aggravated after lumbar puncture and the withdrawal of fluid, it is probable that the growth is either extradural or intradural and adherent to the inner surface of the dural membrane.

8. Tenderness of a spinous process: the vertebral level of the lesion points to bone disease; bony tenderness of spaces well below the vertebral level of the growth points: an intradural extramedullary tumor
CARL R. STEINKE, M.D.

CARL R STYNE, M.D.

SURGERY OF THE NERVOUS SYSTEM

Georgakidis, G. The Employment of Electrical Methods in the Diagnosis and Prognosis of Paralysis Due to Lesions of Peripheral Nerves
Arch. Radiol. & Electrotherapy 9: 227, 6

The nerve and muscle reactions to electrical stimulation are studied in regard to (1) the form and (2) the quantity of the contractions.

Thereas as to qualitative reactions has remained essentially the same since the time of Erb, but those regarding the quantitative reactions have changed since the discoveries of Bloorny Weiss and Lapicque established the measurement of the excitability on bases different from those of the Dubois Raymond has which has been proved erroneous.

The Dubois-Reymond law was established on the basis of continuous current (galvanic excitability). Faradic excitability (produced by induced waves) appears to have no relation to this law. The author summarizes the findings of experiments made by Dubois-Reymond who excited the frog's gastrocnemius muscle directly or through the sciatic nerve.

The excitation as caused only the make and break of the current and provided there was sufficient intensity. During the passage of current of constant intensity no excitation as produced. If during the passage of constant current the intensity as suddenly increased these sudden variations of intensity acted respectively as make and break of current and caused excitation. If current was progressively made or broken, the slower the variation of intensity the greater the intensity that could be employed. With sufficiently slow establishment of the current, excitation was no longer produced whatever the intensity started. The author summarizes the 1 of Dubois Raymond as follows.

The excitation is produced exclusively by the variation of intensity and not by the absolute magnitude of the intensity

The variation of intensity is more efficient the more rapid is the maximum efficiency is reached by the instantaneous state or break of constant current.

3 The time of passage of the current and consequently the quantity of electricity and energy have no rôle in the process of excitation.

The striated muscles of vertebrates, which have contractions of short duration, are called *muscles rapides*. Smooth muscles of vertebrates and voluntary muscles of certain invertebrates such as molluscs or crustaceans, which have contractions of long duration, are called *muscles lentes*. Fick found that the progress of contraction may be made much more slowly yet with the efficiency of *muscles lentes* than on *muscles rapides*. He found also that for short time intervals in *muscles lentes* and *muscles rapides* the intensity giving the threshold depends on the time of passage of the current, but that the time limit beyond which the law of Dubois-Reymond is exact is much shorter in the *muscles rapides* than in the *muscles lentes*. Hoorweg studied and disproved the law of Dubois-Reymond: namely, that the aid of condenser discharges.

Weiss used constant current and rectangular waves of very short duration obtained by means of pistol hose ball, flying at known velocity cut the wires in succession. The duration of the current depends on the distance between the two wires and the velocity of the ball. When the resistance is constant, the intensity is proportional to the voltage. Weiss showed that when the duration of the current is increased the intensity which gives the threshold diminishes to a minimum intensity which remains the same although the duration of the passage of the current continues to increase. The relations of intensity and quantity of electricity together with the current's passage time constitute the law of Weiss.

Excitability cannot be characterized by the recognition of the galvanic threshold alone.

Hoorweg showed with condensers that in man the voltage necessary to obtain the threshold diminishes to minimum value as greater capacities are employed, and the minimum value then remains constant whatever the capacity. This law of Hoorweg is applicable only to condensers.

The chronaxie of Lapicque is the time of passage of current which is constant for given organs and characterizes its excitability. The rheobase of Lapicque is the intensity necessary to obtain the threshold of the contraction with make of prolonged current (classic galvanic threshold). The chronaxie is the time of passage of current necessary to obtain the threshold of contraction with an intensity double the rheobase. To know the chronaxie it is sufficient to find the key the threshold of make of galvanic current, and then to double the corresponding voltage and to find the time of passage of the current necessary to obtain the threshold with the voltage double that of the rheobase. If the discharge of condensers is employed the chronaxie is the capacity which when the current has constant resistance, gives the threshold with the voltage double that which has given the threshold with the galvanic current.

On the basis of a study of chronaxie in animals, Lapicque formulated the following laws of general physiology.

1 The chronaxie characterizes the excitability and, with the exception of temperature, does not vary with experimental conditions.

A muscle and its motor nerve have the same chronaxie: this is the law of isochronism of motor nerve and muscle.

3 When the chronaxie of one of two organs varies alone there is excitability by the nerve when the ratio of the nerve and the muscle passes 2. Cane modifies the chronaxie of the muscle without changing that of the nerve. Strychnine causes the chronaxie of the nerve to vary without modifying that of the muscle.

4 Chronaxie classifies the muscles of different animals as the duration of their contraction classifies them, but with more precision. While the form of the contraction depends on the physicochemical state of the muscular fiber resulting from the histologic structure of that fiber and from the physiological conditions in which it is found (cold, fatigue, etc.), the amplitude of the contraction depends exclusively on the number of fibers; it is therefore comprehensible that the chronaxie varies directly with the form of the contraction, while it is fairly independent of the amplitude. The chronaxie varies with the duration of the contraction; it changes directly as the latent period and is exactly as the rhythm of the tetanus.

Examples of Lapicque's classification of muscles by chronaxie are as follows:

Muscles	Chronaxie sec.	Duration of contraction sec.
Contractors of the common frog	0.000	10
Contractors of the common toad	0.000	
Muscle of the snail foot	0.005	
Heart of the tortoise	0.01	
Claw of the crab	0.02	
Branch of the frog	0.05	10-20

The author gives description with diagrams and illustrations of the technique for the measurement of the excitability by the chronaxie of Lapicque. By this technique the determination may be made in man or animals with the same precision as in the nerve or muscle laid bare and separated from the organism.

WALTER C. B. BART, M.D.

Stopford, J. S. B. Re-suture of Peripheral Nerves.
Brit. J. Surg. 9, 2, 6.

This subject is of greatest importance in connection with the ulnar or median nerve. In the case of the musculospiral nerve or the sciatic nerve, alternative orthopedic measures offer such good functional results that re-suture is rarely necessary.

Stopford observed fourteen cases during a period of five years. These were as follows: median nerve, five; ulnar nerve, seven; musculospiral nerve, one; external popliteal nerve, one.

Several important factors bearing upon the prognosis are:

TABLE GIVING RESULTS OF RE SUTURE IN FOURTEEN CASES

note—P.R.T. Proximal radial nerve; F.S.D. Flexor superficial digitorum; F.P.D. Flexor profundus digitorum
 F.L.P. Flexor longus pollicis; F.C.U. Flexor carpi ulnaris; A.M.D. Abductor minimi digiti

Case	Nerve injured	Site of injury	Months between date of injury and re-suture	Probable cause of failure after first operation	Result of re-suture
	Metacarpal	Arm		Torn and intraneural fibrosis	Failure
	Median	Elbow		Separation of ends	P.R.T. F.P.D. F.L.P. show voluntary power. Slight recovery of sensation.
	Median	Forearm	3	Intraneural fibrosis	Failure. Subsequent amputation of hand
	Median	Wrist	24		Recovery of sensation but poor recovery of motor power
5	Median	Arm		?	All muscles show voluntary power. Recovery of sensation
6	Ulnar	Arm		?	F.C.U. and interossei show voluntary power. Recovery of sensation
7	Ulnar	Arm		?	F.C.U. F.P.D. and A.M.D. show voluntary power. Some recovery of sensation
	Ulnar	Forearm	34	Poor technique	Failure
	Ulnar	Elbow	33	Intraneural fibrosis	Failure
10	Ulnar	Wrist		Intraneural fibrosis	F.C.U. and I.D. show voluntary power
	Ulnar	Arm		Refractile bodies present	F.L. F.P.D. show voluntary power
	Median	Forearm		Intraneural fibrosis	F. Loss
13	Ulnar	Forearm	23	Nerve graft	F.C.U. F.P.D. show voluntary power. Recovery of sensation
	External popliteal	Thigh		Intraneural fibrosis. No fibers seen at end of re-suture	Failure

The interval between the time the injury was sustained and the date of the re-suture

The cause of failure after the original suture

1. Poor technique

2. The effect of third section of the nerve trunk upon the cells of the anterior cornu and posterior root ganglion

The conclusions drawn by the author are as follows:

Under favorable conditions, regeneration may occur after the re-suture of a peripheral nerve.

The end results after successful re-suture are similar to those observed after successful secondary suture.

3. The causes of failure seem to be the same as in second re-suture with the addition of (1) greater

disturbance of the intraneural anatomy by the further resection (2) the effect of third injury to the nerve fibers upon the cells in the anterior cornu and posterior ganglion.

4. Including complications re-suture is contra-indicated (1) when more than three nerves have elapsed since the time of the injury to the nerve (2) when extensive intraneural fibrosis was encountered at the first operation.

5. The imperfect recovery of function and sensation, which is almost invariable after secondary suture or re-suture even under the most favorable circumstances is due chiefly to (1) disturbance of the internal anatomy of the nerve trunk (2) the development of transneurial fibrosis.

(L.S. R. JUNA, M.D.)

MISCELLANEOUS

BLOOD AND LYMPH VESSELS

DeGastone, L. The Etiopathogenesis, Pathologic Anatomy, Physiopathology and Surgical Treatment of True Aneurysms (Etiopathogenesis, anatomopatologica, fisiopatologica, cura chirurgica degli aneurismi veri) *Ann ital chir* 923 4, 593

The method of high ligation should be reserved for cases in which better methods are not applicable.

I high ligation of the artery it is well to tie the vein also.

Up to the present time the method which has been most successful is the removal of the aneurysmal sac. This procedure gives the best assurance against the development of peripheral gangrene and the persistence or recurrence of local pain.

Incision of the sac with ligation of the artery above and below before and after the incision should be resorted to only in the rare cases in which dissection of the sac is impossible.

Lateral suture is indicated after the removal of the sac only if the arterial walls near the orifice of communication are sufficiently normal to insure adequate regeneration of the vascular sheath.

Surgeons experienced in vascular surgery have been obliged to abandon obliterative endo-aneurysmorrhaphy because of the difficulty in mobilizing the rigid thickened walls of the sac for suture.

The use of arterial or venous transplants, which is indicated more definitely in cases of false traumatic and arteriovenous aneurysms, might be attempted but requires great technical skill.

I the present state of our knowledge the surgical treatment of aneurysms should be standardized because it comes within the scope of every surgeon. All surgeons should be proficient in high ligation, the removal of the sac, and removal of the sac followed by lateral suture.

The future will show if the restorative and reconstructive aneurysmorrhaphy of Matas and arterial and venous grafts offer unquestioned advantages over high ligation and extirpation of the sac.

Contrary to the general belief injuries are not the most frequent causes of aneurysms. For aneurysmic dilatation some inflammatory process is necessary. Weakness of the arterial wall may be of mechanical or inflammatory origin but as a rule both factors are responsible. W. A. BRIDGES.

Silbert, S. A New Method for the Treatment of Thrombo-Angiitis Obliterans. *J Am Med Ass* 9 June, 1935

The fibrous scar tissue surrounding the blood vessels in thrombo-angiitis obliterans irritates the nerves or causes secondary nerve degeneration. In the lower extremity the nerves lie beside the blood vessels only below the knee. The femoral vessels do not come in contact with the sciatic nerve.

The anons therapeutic measures for the relief of the pain of thrombo-angiitis obliterans include physical procedures to improve the circulation, such as baking, Bier's hyperemia, and exercise and surgical procedures such as arteriovenous anastomosis, ligation of the femoral vein, and the periscular sympathectomy of Lenke. Since the sympathetic supply of the large vessels of the lower extremity comes off from the adjacent nerves at various levels along the course of the vessels there is some doubt as to the value of perivascular sympathectomy. Favorable results from prolonged intra-

neous administration of sodium citrate have been reported. Meyer advocates flushing with 8 to 10 liters of Ringer's solution through a duodenal tube and supplementing this with several daily subcutaneous injections and a diabetic diet. A last resort amputation has been done to relieve the pain.

The author advocates the injection of absolute alcohol into the nerve, as far toward the periphery as possible and reports three cases of thrombo-angiitis which were temporarily relieved by such injection of the posterior tibial nerve at the level of the internal malleolus. When an injection into the ankle fails to give relief one or both main nerves should be injected higher, perhaps at the lower level of the popliteal space. In order to prevent paralysis of the large calf muscles it is important to choose a level below the distribution of their nerves.

Under aseptic conditions primary union will take place in the incised, poorly nourished tissues of the ankle. Before it is injected with the alcohol the nerve is exposed and anesthetized with procaine. Paralysis of the intrinsic muscles of the foot is a minor consideration.

The author has treated five patients by the method described. One of these cases was not suitable as extensive gangrene made amputation necessary. In another pain in the little finger was not relieved by an injection of the ulnar nerve in the hand, being due undoubtedly to involvement of the nerve proximal to this point. Three patients have been relieved of pain in the foot for more than six months as the result of injection of the posterior nerve at the ankle.

The author does not claim that the treatment described will cure the disease but recommends it as an efficient palliative measure.

WALTER C. BECKETT, M.D.

INDUSTRIAL SURGERY

Corn, H. R. The Acute Painful Back Among Industrial Employees. Alleged Compensable Injury. *J Am Med Ass* 22 June

Many persons erroneously yet innocently attribute non-traumatic backache to a traumatic cause because of popular opinion associating the two.

Because headache gives no external symptoms patient his anxiety to prove its existence is apt to exaggerate and clinical symptoms not present. Thus psychological apprehension disappears if he is assured of the surgeon's belief in the presence of the condition.

The author has reviewed a series of 56 cases from industrial hospital. 1. 25 per cent the pain was located in the lower back, below the level of the tenth dorsal vertebra. Certain cases are frankly traumatic while others are clearly non-traumatic. In a third group the conditions might be due to either traumatic or non-traumatic causes. Some of the traumatic cases may have had inherent weaknesses also a factor. The non-traumatic cases illustrate the necessity for complete physical examination.

A potential group consists of cases in which real or structural deformities predisposing to symptoms in the event of trauma. This group is composed of persons with hypermobility, asymmetrical limitation of motion, or rigid immobility. In some instances the posture may indicate the defect. The patient may give no history of trauma, but may find that he changed his occupation frequently to avoid becoming sore. When once the assertion of trauma has been established the patient usually remains compensable apart of therapist at diagnosis. The author gives a good outline of routine examination for use in dispensary work.

Sacro-lumbar relaxation is infrequent and usually brought on by sudden strain on undjured back. Sacro-lumbar lesions are intrinsic or extrinsic. The former is the more severe. There is usually muscle spasm which is an attempt to lighten the exaggerated loadings. (MAY 11 JOURNAL 31 D)

LEGAL MEDICINE

Malpractice in Treatment of Fracture of Femur
F. M. (V D) 25 V D p 7

A physician was employed to reduce fracture of the arm. Fluoroscopic examination showed that the bone was broken diagonally several inches below the elbow.

On account of the swelling the fracture was placed in a sling and after first aid the patient was given. Later attempts were made to reduce the fracture by manipulation. A few days after the accident the patient was taken to a hospital where an operation was performed, the tissues of the forearm were separated, the broken bone was placed in position and fastened with wire and the arm put in plaster. When the cast removed a week later the elbow was stiff and up to the time of the trial was still rigid.

The Court held the evidence as sufficient to support judgment for the patient. The physician complained that the verdict of \$5,000 was excessive but in view of the circumstances the Court held it as not so large as to indicate gross or prejudicial and therefore affirmed it. (MAY 11 JOURNAL)

Payment of Surgeon Withheld Because of Alleged Malpractice
Haskell vs. Hanson (Mass) 25 V D p 1007

Hanson's index finger on his left hand was cut by a saw. Dr. Haskell amputated the finger and dressed the stump. The stump healed but remained painful. Another operation was then performed. The wound healed properly and the patient did not return for treatment.

When the patient failed to pay his bill for the end of four years Haskell brought suit for the amount due. If one sought to defend on the ground of malpractice producing medical testimony that the sensitive condition as caused by the end of nerve or bone projection in the stump of the finger which could probably be remedied by an amputation higher up. However no one testified that the physician had failed to operate skillfully or that the sensitiveness resulted from improper medical or surgical treatment. On the contrary it is agreed that such sensitiveness is not unusual and that neither amputation could not certainly remedy the condition.

The Court discovered nothing to show that the physician failed to exercise due skill and diligence and awarded him the full amount sued for.
WILLIAMS F. MOORE

Suit for Damages for Alleged Failure to Remove Placenta
Kramer vs. Rosengarten 25 (Mass) 25 V D p 314

The defendant physician in this case was called to attend a woman threatened with miscarriage. As the patient as the seven miles from her home he gave the necessary treatment and took her to her home. Three weeks later four months old fetus delivered the physician being called five hours afterwards. With regard to the subsequent facts there some dispute. The physician testified that he was told that the placenta had been expelled and had been thrown away but this was contradicted by the woman's husband. At various times during the next term the physician was told by the husband and his wife that she had severe hemorrhages, pain and headache and on each occasion he gave assurance that she could be all as free as before. Her condition then became alarming and he was called. Other physicians were called who caused the patient to be removed to hospital. At the hospital decomposed parts of the placenta were removed. The patient then improved but died sixteen days later.

The medical experts called to testify differed. Those for the physician attributed the death to embolism while the others attributed it to septicemia due to the presence of parts of the placenta in the uterus. The verdict of the jury was in favor of the administrator of the woman's estate.

The physician contradicted that Mrs. Kramer did not obey his instructions that although he told her to stay in bed during the early treatment it was intended to be household duty. There was no

evidence however that this was responsible for the miscarriage.

The Court held that the jury could assume that the statements made to the physician regarding hemorrhages, chills, and headache called for treatment or action on his part, and that there was sufficient conflict of evidence as to whether the physician knew the placenta had not been expelled for the jury to determine where the truth lay. The conceded cause of the hemorrhages which persisted so long after the miscarriage was the decomposing placenta in the uterus. The verdict and judgment were affirmed. WILLIAM E. MOONEY

**Suit for Damages for the Alleged Leaving of
Gauze in the Wound. *Pars vs Carter* (11)
33 N H p 68**

When the plaintiff was 17 years old she was operated on for appendicitis by the defendant physician. Two months later he opened the wound to discover why it did not heal properly. Soon after and the plaintiff went to hospital and remained five weeks, but the wound did not heal until several months later. About three years later she was troubled with pain in her foot and after consulting the defendant twice, went to another physician whose treatment caused the disappearance of the

pain within a few weeks. Subsequently the patient fainted and a few months thereafter consulted another physician, complaining of severe pain in the abdomen. Later she consulted the defendant regarding this pain and he performed an operation. Subsequently another physician and the patient's mother each removed two small pieces of gauze from the wound. Six months later another piece of gauze and a thick pasty material less than 2 in long were removed. The wound then healed properly.

The defendant testified that the gauze sponges were counted before and after the operation.

The Court held that the operation was performed by the most approved method unless the evidence established that the gauze was not removed. Two nurses testified that accurate count was made and from their evidence the Court was convinced that the kind of gauze taken from the patient's body was not that used at the hospital at the time of the operation. The plaintiff was a hysteric, and it is a recognized fact that persons of this type have manipulated wounds and placed substances therein.

At least the plaintiff failed to prove by credible evidence that the defendant was responsible for the presence of the gauze later removed. Judgment for the physician was therefore affirmed.

WILLIAM E. MOONEY

GYNECOLOGY

UTERUS

Cullen, T. S. The Use of Sutures as Tractors in the Vaginal Operation for Prolapse. *Am J Obst & Gynec* 1: 314

The thoracic chronic catgut sutures are used in the vaginal operation for prolapse. These sutures are of the figure-of-eight type and are placed in the body of the uterus after the vesicouterine peritoneum has been opened. They are all tied each successively lowest on being used as a tractor. The end of the suture are then reintroduced carried through the peritoneum and vaginal wall and left untied until the cervical stump is amputated and the vaginal mucosa is sewed to it by figure-of-eight sutures. The result of this method has been excellent.

The article is well illustrated.

J. L. COWIE, M.D.

Nylander, A. J. Restoration of the Round Ligament in Retroversion of the Uterus. *Med J Australia* 191: 477

The author splits the anterior peritoneum parallel with the round ligament and a little toward the bladder. He undermines the edges and leaves the opening with perfect gash. The outer limit of the suture is the internal abdominal ring and the inner limit near the uterine corn. This procedure pulls up the ligament in the broad ligament as well as that in the round ligament. Nylander has used this a number of cases with good results.

R. F. COCHRAN, M.D.

Hughes, R. R. Pre-Cancerous Conditions of the Cervix Uteri. *Am J Obst & Gynec* 9: 1435

I must use the word "adeno" term indicating loss of tissue but as in reality there is an increase of tissue in this condition, it should be described as a sessile adenoma. The vaginal portion of the cervix is normally covered with many layers of a squamous epithelium continuous with that of the vagina. At or near the os externum the epithelium suddenly becomes cubical and is in fact the columnar glandular epithelium which lines the cervix and the body of the uterus and coats the single layer of tall cells. These cells are continuous with the glands of the cervix which are numerous and lined with a single layer of columnar epithelium. The glands of the cervix are more complicated and larger than the glands of the uterus. In fact, the cervix is itself a gland and its structure quite apart from the body of the uterus. It is in connection with these glands of the columnar glandular epithelium lining the cervical canal that the pathology of erosion is of interest.

The red patch which is so typical is due to an overgrowth and hypertrophy of the columnar epithelium lining the cervical canal which spread over and grow through the squamous epithelium normally covering the vaginal portion of the cervix. It is noted, not in destruction of tissue but by the replacement of deep columnar cells over wider areas than normal. The bright red color is due to the fact that the surface is covered by only a single layer of cells which allows the bright color of the underlying blood vessel to show through. It returns to the normal occurs it comes from the removal of this surface by the normal squamous cells of the vaginal mucous membrane. When this happens the deep cells glandular type become buried and covered over. They lose their function being to secrete the formation of cysts in the cervix. A mass of small mucous cysts may appear on the surface of the cervix or extend deeply into the tissue of the cervix. These are called leukoplakia, so often noted in this condition indicate inflammatory change.

The presence of just scattered throughout the cervix is common but their extent is often not appreciated until it is revealed by amputation or excision.

The cervix is the best place to examine and has reached the age of 20 years should be examined by dissection of the cervix. If such disease is found it should be treated. In some cases the treatment may be palliative but often a total removal of the cervix is necessary. It must be borne in mind that cancer begins in small way perhaps in one single cell and that while the cervix is present but slight evidence of disease thus may be sufficient in the presence of uterine pathology and local medium to cause cancer.

J. L. COWIE, M.D.

ADnexAL AND PERI-UTERINE CONDITIONS

Sampson, J. A. The Histology of Ovarian Hematomas (Hemorrhagic Type of Endometrial Mucellous Type). *Am J Obst & Gynec* 10: 1

As it is known that the peritoneal condition arising from the implantation of epithelium which escapes from the fallopian tubes into the peritoneal cavity are probably the most common pelvic lesions found in women between the ages of 30 and the menopause. During the last thirty years cases of such lesions are found by the author in 70 abdominal operations for pelvic conditions in women between 20 and 50 years of age. If the epithelium escaping from the tube fall on suitable tissue it develops into glands or tubules of endometrial (mucellous) type which generally react to menstruation. These adenomas are usually found

on the structures which are most frequently in close contact with the fimbriated ends of the tubes, such as the lateral and under surfaces of the ovaries and the peritoneal surface of the structures in the cul de sac. Implantation adenomata may occur only on the surface of the ovary or ovaries, both in the ovaries and on the pelvic peritoneum, or on the pelvic peritoneum alone.

The primary peritoneal implantations are usually small and insignificant but may spread and become invasive.

The implantations on the ovary invade the tissues of that organ and, as a result of their reaction to menstruation, develop into superficial or deep hematomata (hemorrhagic or menstruating cysts) of endometrial (mucellian) type. The casting off of all of their epithelial lining by menstruation may cause their destruction before perforation occurs, but most of them rupture or perforate into the peritoneal cavity. Perforation occurs in the superficial ovarian hematomata while they are still small, a few millimeters in diameter and as the result of menstruation and perforation the entire epithelial lining may be cast off and the hemorrhagic cyst may disappear.

The hematomata developing in the deeper tissues of the ovary may attain a large size, several centimeters in diameter, before perforation occurs. As the menstrual blood is retained in the cavity of the hemorrhagic cyst and in the stroma of its lining for long time, many interesting histologic changes occur in the wall of the cyst in the attempt to absorb the menstrual blood and to refine the denuded surfaces by epithelium from that which had not been removed by menstruation. The development and activities of the endothelial leucocytes, which act as scavengers, play an important part in the absorption of the menstrual blood and the deposit of pigment derived from this blood in the walls of the hematomata. Perforation permits the contents of the hematomata to escape into the peritoneal cavity and temporarily eases the embarrassment caused by its retention. The perforation is sealed by the adherence of the ovary or cyst to adjacent structures. The hematomata again fills up with blood and its reaction to menstruation, and repeated perforations may occur. As the reaction to menstruation is destructive, and as the repair and regeneration of the epithelial lining is accomplished under great difficulties because of the retention of the menstrual blood, the ultimate tendency of the hemorrhagic cyst is retrogression.

In its reaction to menstruation portions of the epithelial lining are cast off into the cavity of the hematomata, and therefore may be found lying free in its hemorrhagic contents. Adenomata of the endometrial type may be on the surface of the ovary about the perforation and in the tissue of the structures adherent and adjacent to it as well as in situations where the material escaping through the perforation lodges. This indicates that these adenomata may be derived from the implantation of

epithelium cast off by menstruation into the cavity of the hematomata and escaping through the perforation. Implantations may arise from small as well as from large ovarian hematomata, generally the larger the hematomata and apparently the larger the perforation, the wider the distribution of the implantations. These secondary implantations often resemble normal endometrium more closely than the epithelial lining of the original ovarian hematomata and are often more invasive and more closely resemble normal endometrium than the implantations found in the pelvis without evidence of an ovarian hematomata with perforation, those resulting from a primary implantation from or through the tube. For these reasons the theory believes that in the development of pelvic implantation adenomata of endometrial type the ovary is an incubator or intermediary host which, some instances may possibly impart greater virulence to the epithelium developing in it. However it is not an essential intermediary host in the origin of all implantation adenomata of endometrial (mucellian) type.

It is possible that primary ovarian and peritoneal implantations (those developing from epithelium escaping from the fallopian tube) arise from both tubal and uterine epithelium. This was suggested by the specimens studied by the author. Histologically these implantations may be divided into three groups. The first are those consisting of glands or tubules and dilated tubules which often are lined by ciliated epithelium and are without the characteristic stroma of normal endometrium, or show stroma poorly developed. The structure resembles that of the mucosa of a primary adenomyoma of the tube and strongly suggests that the implantations might have been derived from the epithelium of the fallopian tube. The second group the adenomata consist of stroma and glands similar to those of normal endometrium. The histologic picture strongly suggests that these were derived from uterine epithelium escaping through the lumen of the fallopian tube from menstruation with a back flow into the peritoneal cavity or from portions of tubal mucosa which had reacted to menstruation. In the third group the picture suggests a mixture of adenomata of tubal and uterine type or represents transitional stages from one to the other.

The epithelium of the ovarian hematomata or hemorrhagic cysts may also suggest either a tubal or uterine origin.

It comes with implantation adenomata in the pelvis associated with an ovarian hematomata showing evidence of perforation both primary implantations from or through the fallopian tubes and secondary implantations from the ovarian hematomata may be present, but the latter probably predominates a rule.

It is difficult to determine the factors which favor the implantation and growth of tubal and uterine epithelium on the surface of the ovary and on the peritoneum. As implantations result from the per-

formation of the ovarian hemioma containing menstrual blood, this may be an important agent in facilitating the development of these implantations. Therefore menstruation with a back-flow through the tubes into the peritoneal cavity may be an important contributory factor. The implantations are frequently found in patients with retroflexion of the uterus, leiomyomata, and uterine polyps, conditions which when the tubes are patent, might favor retrograde menstruation.

The reaction of the lining of ovarian hemioma of endometrial type to menstruation, pregnancy (one case) and old age (1 case) is similar to that of the uterine neoplasms.

The author believes that the implantation adenoma in the ovary derived from tubal and uterine epithelium are the source of many ovarian cysts and carcinomata and is convinced that two of the latter in the cases studied arose from this source.

E. L. CORVALL, M.D.

HOOVER, M. R. Solid Carcinomas of the Ovary. *J. Surg.* 92, 1931, 768.

Thirty-seven cases of solid carcinoma and 1 case of solid sarcoma of the ovaries are found in the examination of malignant tumors of the ovary at the Mayo Clinic between January 1, 1909, and August 1931. These tumors were solid throughout or contained only relatively small cysts due to degeneration and necrosis or retention. All cases of benign or malignant ovarian cysts, dermoids, etc. were excluded. As during the same period of time 4175 tumors of the ovary are removed, the malignant tumors constituted 93 per cent of all ovarian neoplasms. During the same period 940 malignant ovarian tumors are removed, and of these 0.086 per cent are solid.

The most common symptoms are pain, tumor ascites, loss of weight and strength, anorexia, and bladder and rectal disturbances. Pain, which is present in thirty cases, varied in type and location. As a rule it was located in the lower abdomen and pelvis, but occasionally occurred in the lumbar or sacral region of the back and radiated down the groins. It was usually described as a constant dull ache or a burning, or dragging sensation. Occasionally it was sharp and severe because of twisting of the pedicle. It then resembled the colic due to renal or ureteral calculus. Twenty-two of the patients had tumors. Twenty cases the tumor was discovered by the patient herself in seven cases it was discovered by the family physician and in ten it was not discovered until the time of examination at the Clinic. The general health of thirty-five of the patients was below normal or very poor. Light

feels had loss of weight ranging from 5 to 30 lb. The frequency, burning, painful sensation with palpation and pressure are the most common symptoms.

Physical examination usually revealed the tumor in the pelvis. Often it extended above the knees and sometimes almost filled the entire abdomen. Fixation in such cases may be due to extension of the growth to the pelvic wall or adjacent viscera, or to inflammatory adhesions. The blood picture showed varying degrees of secondary anemia as in malignancy in other parts of the body.

The clinical diagnosis of solid carcinoma of the ovary is rarely made definitely. As a rule the surgeon must wait for the pathologist's diagnosis. The differential diagnosis includes the consideration of benign and malignant ovarian cysts, ovarian fibromata and dermoids, fibromata of the uterus, retroperitoneal tumors, and tumors of a displaced kidney.

Exploratory operation should be offered to all patients, even when there is ascites, unless metastases can be definitely demonstrated. Palpation of an enlarged nodular liver, enlarged hard inguinal or pelvic glands or extension of the induration of the broad ligaments indicates conditions which cannot be relieved by operation. Roentgenograms of the chest and pelvic bones make it possible to detect metastases in these regions. When metastases are present radium and the roentgen ray may temporarily relieve the pain and suffering and prolong life for short time. Periodic abdominal paracentesis may be necessary on account of the accumulation of fluid. In cases suitable for surgery postoperative applications of radium in the groin and rectum and applications of the roentgen ray to the abdomen and back are of value if recurrence is feared because it is impossible to remove all of the malignant tissue. When recurrence takes place, radium and the roentgen ray are of little value even as palliative measures.

The prognosis of solid carcinoma of the ovaries is comparatively poor. Formerly this tumor was believed to be relatively benign, but recent reports agree that it is more malignant than as indicated by previous reports. Of the patients whose cases are reviewed in this article only three are living and all after the five year period the length of time since the operation being five, one and one-half, one and one-half and one year respectively. Two are living and all after three years, two after 1 year, one after eighteen months and two after ten months. Six patients died within six months, three within one year and four after 1 year.

OBSTETRICS

PREGNANCY AND ITS COMPLICATIONS

Norman, C. C. and Murphy D. P. Pregnancy in the Tuberculous with the Report of 166 Cases. *Am J Obst & Gynec* 9 iv 997

The conclusions drawn by the authors from the study of the 166 cases reviewed are as follows:

1. The combination of pregnancy and pulmonary tuberculosis is common.

2. Pulmonary tuberculosis exerts little or no influence against conception.

3. Pulmonary tuberculosis exerts but little influence on the course of pregnancy and except in the advanced stages exerts little or no influence toward causing abortion, miscarriage or premature labor.

4. About 20 or 30 per cent of cases of mild quiescent pulmonary tuberculosis and 70 to 90 per cent of more advanced cases exhibit exacerbations during pregnancy or the puerperium.

5. Marriage is one for the tuberculous woman than for the tuberculous man because of the dangers incident to pregnancy.

6. Unless the pulmonary lesions have been quiescent for a moderately long period the tuberculous woman should not marry.

7. Tuberculous women should not become pregnant unless the disease is in the first stage and has been quiescent for a minimum period of 1 year.

8. It is as yet impossible to determine with certainty which case will bear the added strain of pregnancy and which will not. Moderately extensive lesions, extension, especially to the larynx, loss of weight, fever, hemorrhage, sweats, lack of vigor and inability to obtain proper treatment are unfavorable.

9. Prior to the fifth month of pregnancy the uterus should be emptied if there is any indication that the disease is becoming active. Curettage during the first six or eight weeks, and in the later cases vaginal hysterotomy are the methods of choice. It must be remembered, however, that abortion can be induced without the induction of general anesthesia and that the necessity for the use of a general anesthetic in vaginal hysterotomy, may outweigh the advantages of the procedure.

About 65 to 70 per cent of suitable cases will be benefited by this treatment provided it is employed as soon as acute symptoms arise and proper after treatment is instituted. Late intervention, a week or more after the onset of the exacerbation, has given less satisfactory results.

Sterilization is not justifiable as a routine procedure. Furthermore, as a routine procedure it is not advisable as in many cases it will be more expedient to empty the uterus without the use of an

anesthetic. Apart from the dangers of a general anesthetic sterilization prolongs the operation and generally adds to its gravity. If the patient's condition is poor it is useless and if she improves, as a result of the emptying of the uterus, it is better to perform the sterilization at a later date when she is in better condition.

10. After the fifth month of pregnancy it is generally advisable to treat expectantly. Labor should be made as easy as possible. The induction of labor two weeks before term may be desirable rarely if ever should the patient be allowed to go beyond term. During labor the use of forceps or version is often indicated.

11. Infants should not be allowed to nurse from tuberculous mothers, and should be especially guarded from infection.

12. Hygienic and dietary treatment should be employed at all times. The patient should be kept under close observation and examined by a competent internist at regular and frequent intervals.

13. In the great majority of cases, even in those in which the symptoms are first observed during pregnancy the tuberculosis preceded the pregnancy.

E. L. CORVILL, M.D.

LABOR AND ITS COMPLICATIONS

Haskell, C. C., and Rucker M. P. The Action of Ergot and Solution of Hypophysis on the Uterus. *Am J Obst & Gynec* 9 iv 608

From the findings of experiments it seems fairly safe to conclude that pituitary solution affects the uterus of the cat and the dog more powerfully than ergot and is more apt to cause either tetanus or an increase in tone which is similar in its effect to intra uterine pressure. Therefore in the early stages of labor it is more dangerous than ergot.

In no clinical case did the use of ergot elicit tetanic contractions of the uterus—the first stage of labor. This is in such variance with expectations based on clinical experience that the authors are at loss to interpret their results. At first they were inclined to assume that the drugs used were inert but this was disproved by testing them upon animals and by the fact that the results obtained with their lots of ergot were practically the same. They therefore conclude that there is a great deal of variation in the response of human uteri to ergot and pituitary solution and that the disastrous results sometimes following the use of these drugs occur in cases in which the uterus is particularly sensitive to their effects. The authors have found such uteri in their work with animals. A certain number of cases may be attributed to the sensitization of the uterus by repeated doses of ergot as

noted by Edmunds and Hale. The authors have seen no such phenomenon in clinical cases but in the laboratory have noticed a marked variation in the response of the same uterus to ergot.

Next to the ease and promptness with which a tetanic contraction of the uterus is elicited by pituitary solution, the most interesting feature of the action of this drug is the variation in the latent period. It has often been noted clinically that the effect of the solution is the more prompt and energetic the closer the patient is to term. This has been borne out by the authors' observations. When it was necessary to induce labor in the seventh month the latent period was four minutes, while at term it was 1.0 minutes. In the third stage six minutes elapsed after the injection of the solution before response was noted, while after the delivery of the placenta the latent period was eight minutes.

The authors' conclusions are as follows:

It can be readily demonstrated by animal experimentation that the action of ergot and pituitary solution upon the uterus is the same at the doses of ergot used are sufficiently large.

The action of pituitary preparations is much more powerful than that of ergot. This is readily shown both by experiments upon animals and observations in clinical cases.

It is a common clinical finding and abundantly proved by laboratory experiments that the action of both drugs varies greatly in different periods.

E. L. CORVILL, M.D.

Kosmak, G. W. Intra Uterine Rupture of Velamentous Umbilical Cord. *Am J Obst & Gynec* 922, 69.

A primipara in the eighth month of pregnancy had gone through a mild degree of toxemia of the nephritic type which had responded favorably to treatment. The placenta presented infarct formation.

Such undoubtedly led to its separation. The administration of castor oil as probably contributory factor. With the separation of the placenta there was laceration of portion of the velamentous cord. It is probable that the sudden gush of blood came from the placenta as there was sufficient dilatation of the cervix and no evidence of placental separation at the lower pole (account for a hemorrhage of this severity). A fact of interest is that the patient did not experience the pain usually associated with premature separation of the placenta. The baby died from asphyxia due to the intra uterine hemorrhage from the cord. The velamentous cord as inserted at the upper pole of the placenta. Whereas in most of the reported cases this anomaly was present in the region of the cervix and rupture occurred as the cervix dilated. The patient made an uneventful recovery after cesarean section. The wound healed by primary union and there was no shock. Subsequent examination of the uterus disclosed nothing abnormal.

The frequent association of velamentous cord insertion with placenta previa should be borne in

mind. Irregular bleeding at the end of the first stage of labor should lead us to suspect this condition if lateral placenta was believed to be present and was not found on careful examination, especially when the presenting part is well engaged.

With regard to the treatment the author states that when the accident occurs in premature and is associated with such a severe hemorrhage as in the case reported, due to another cause, cesarean section is the method of choice.

E. L. CORVILL, M.D.

PUERPERIUM AND ITS COMPLICATIONS

Piper, E. B. The Treatment of Puerperal Sepsis by the Use of Mercurochrome Intravenously, With Report of Animal Experiments in Chemical Disinfection of the Blood. *Am J Obst & Gynec* 922, 53.

A 1 per cent solution of mercurochrome is prepared with sterile distilled water. As it has been shown by other investigations, which the author experiences corroborates, that the drug soon loses its strength, it is always freshly prepared just before it is to be used and put up in 50- to 100-cc ampoules. The solution should never be employed unless it is absolutely clear. It is injected very slowly by means of fine needle and large syringe at temperature as near 100 degrees F as possible. Formerly the patient was given dose of magnesium sulphate at the end of 4 to 6 hours, but this is no longer done as it appears to eliminate the drug before it has chance to exert its germicidal effect. Heat is applied externally for the chill, and bowditch mixture is given as an intestinal sedative to overcome the diarrhea if it continues long. A careful record of the excretion of urine is kept. The administration of the mercurochrome may be repeated, but is never done as long as there is any sign of dye in the urine or fever. As many as five doses have been given. Occasionally salivation occurs.

The reaction following the intravenous injection of mercurochrome is analogous to that observed after the introduction of serum, bacteria, or sterile soil by similar route and can probably be explained in the same way. Some of the action of the drug may be due to the immunization or inhibition of the circulating bacteria, possibly also to their direct destruction by the drug, as in the test tube, aided by the increase in the leucocytes which also accompanies reaction following an injection. It is possible also that mercurochrome reduces the number of circulating organisms by combating them where the infection localizes. The chemical is of the greatest value in local infection.

The conclusions drawn by the author are as follows:

There are certain cases of puerperal sepsis so fulminating and virulent that no treatment can save life.

The use of antistreptococcus serum has appeared to be of great value in some cases. Frequently

repeated small blood transfusions and certain methods of intravenous medication are of benefit

3 A solution of mercurochrome given intravenously in the proper dosage appears, in some cases, to be of great value and to have no deleterious effects

4 Puerperal septicaemia is so serious that heroic measures are justified E. L. CORVILL, M.D.

Bruett H: The Surgical Treatment of Puerperal Gas Bacillus Infection of the Uterus. *Physiometra* (Beiträge zur Kenntnis und zur chirurgischen Behandlung der puerperalen Gasbrandinfektion des Uterus. *Physiometra*) *Arch f Gynaek* 9: 271.

The pathologic anatomy and the clinical aspect of gas bacillus infection of the uterus are described in detail on the basis of six cases. Fränkel's bacilli are demonstrated as the exsiccants in every instance. Removal of the uterus resulted in a cure in only one case.

The typical clinical picture of general gas bacillus infection with pronounced icterus was present in only one case. In three cases icterus was entirely absent in the beginning, but appeared in the subsequent course of the disease. In one case the gas bacilli were not demonstrated in the blood until just before death. In many cases the urinary findings are of great importance in the diagnosis. In very severe cases the urine is almost black and has the consistency of varnish. It may also contain gas bacilli. The route of dissemination of the gas bacillus is almost exclusively along the lymph channels.

The prognosis of surgical treatment in cases of puerperal gas bacillus infection may be considered as relatively favorable if general infection does not result. In gas bacillus peritonitis without general infection the results of drainage are not entirely unfavorable, but in general gas bacillus infection without symptoms of peritonitis operative interference is usually futile. TRALLER (Z).

NEWBORN

Joyce C. Patent Foramen Ovale. *Med J Australia* 9: 14, 529.

The author reports two cases of patent foramen ovale. One was that of a female child of six months who had severe bronchitis with a patch of pneumonia at the base of the right lung. Cyanosis had been present since birth. A systolic murmur was heard all over the chest and the apex beat at the fifth inter space on the right side. The abdominal viscera were in normal position.

The other case was that of a girl of 9 years who had always been very poorly nourished and when examined by the author was extremely emaciated. This patient also had been cyanosed since birth. A diagnosis of pneumonia of the right lung and a patent foramen ovale was made.

In the first case only water was given during the febrile period, and in the second only water and orange juice were allowed. Both patients recovered. The author states that he has never regretted the use of the starvation method of treatment during the febrile stage of disease. R. E. CHAMBERLAIN, M.D.

GENITO URINARY SURGERY

ADRENAL, KIDNEY AND URETER

Keller O. Traumatic Subcutaneous Rupture of the Kidney (*Sur la rupture sous cutanée traumatique du rein*) *Arch f med d reins et d organes genit urinaires* 9: 4, 37

Subcutaneous traumatic rupture of the kidney is a rare lesion being found in less than 1 per cent of surgical cases. According to Keller the records of the Municipal Hospital at Copenhagen show forty-three cases in a total of 83,000 surgical cases treated during the last twenty six years. The right kidney appears to be more frequently involved than the left, and the condition occurs much more frequently in men during the working years than in women or children.

The rupture may be direct or indirect. The majority of the cases referred to by Keller are direct injuries. A direct rupture is due to compression of the organ by the thoracic abdominal wall and associated internal hydraulic pressure in the kidney. Frequently the twelfth rib is fractured by it compression against the transverse process of the first lumbar vertebra.

The lesions may be classified according to their degree and extent as (1) superficial lesions of the capsule and cortical substance not involving the calices (2) ruptures involving the calices or the pelvis, which are generally localized on the posterior surface of the kidney (3) complete crushing of the kidney which is generally associated with other severe injuries (4) injuries of the pedicle or the pelvis, which are often combined with some of the foregoing conditions.

The most common complication is fracture of the twelfth rib, but other ribs also may be fractured. Another common complication is peritoneal rupture with the discharge of blood and urine at the cavity.

The general symptoms of syncope and shock mask the local symptoms in many cases, even when the injury is severe, the subject may be able to walk and to work. On the other hand, a slight rupture may be followed by immediate collapse. Vomiting may be the first sign of peritoneal injury. The local signs are skin abrasions at the point of injury swelling on the lumbar region, and dullness on palpation when an effusion collects. The kidney is sensitive to pressure and the pain is lancinating and colicky.

Hematuria occurred in 95 per cent of the reported cases. It does not indicate the extent of the hemorrhage, and in the extremely serious cases, such as those in which there is total rupture of the pedicle or the ureter or the pelvis of the kidney as obstructed by clots, it may not be observed. Traumatism may be followed by polyuria or complete anuria.

When hematuria is present it may be very difficult to refer it to the kidney rather than to the bladder unless there are other symptoms. On account of the risks of infection, cystoscopy is possible only in cases which are to be operated upon immediately. Hematuria therefore is of only relative value as an indication of the gravity of the condition, perirenal tumefaction and effusions are of greater importance.

According to different authorities, the mortality of non complicated traumatic subcutaneous rupture of the kidney varies from 5 to 7 per cent. The principal dangers are hemorrhage and infection, which are responsible for 45 and 4 per cent of the deaths respectively.

Up to 876 the treatment was usually non operative. The first nephrectomy for this lesion as done in 1883. Slight injuries should be treated conservatively operation being reserved for those which are in immediate danger.

1473 conservatively treated cases reported in the literature up to 1908 there were thirty deaths from hemorrhage thirty-eight from infection, and nine from other causes. The opinions of surgeons vary greatly as regards the indications for operation and the time at which it should be performed. In the conservative treatment the risk of hemorrhage infection and other complications are greater than in operative treatment.

The majority of surgeons do not hesitate to operate when peritoneal injury is associated with the renal injury. The most auspicious time is immediately after the cessation of the initial shock. Nephrectomy is indicated in cases of (1) pedicle lesions causing trophic disturbances, (2) extensive infection (3) contusions destroying all functional tissue and (4) lesions necessitating quick operation. Conservative operation consists of tamponade, returing and drainage or nephrotomy.

Short histories of forty-three cases collected by the author are given. Six of these cases in which nephrectomy as done there were three deaths. 7 patients treated by nephrotomy recovered. 1 of the three cases not operated upon there were four deaths. W. A. BARNES.

Eggers, H. The Surgery of Horseshoe Kidney (*Zur Chirurgie der Hufeisennieren*) *Fach f med Chir* 93: 13, 47.

The number of cases in which anatomically non-pathologic horseshoe kidneys are discovered in the presence of the Rorring syndrome is increasing. In the case reported by Eggers the symptoms pointed to a concretion and infection in the pelvis of the left kidney. A malformation of the kidney was not suspected. After the removal of the stones by

pyelotomy it became apparent that the ureter passed over the lower pole of the kidney and that nephropexy was indicated to improve excretion. The left kidney was connected to the right by an isthmus 3 cm wide and 0.5 cm thick.

The division as done without difficulty with the use of two clamps and cauterization of the cut surfaces with the Paquin cautery. From the drain there was a slight transient discharge with a urinous odor. The kidneys did not rebound to the normal sites after their division, as in Rossignol's case. A subsequent pyelographic examination revealed dilation of the right renal pelvis and a low position of the kidneys. Fixation of the right kidney was not attempted during the operation because it was regarded as advisable to wait the operative result on the left kidney on account of the presence of urinary infection. The result was completely successful on the left side but on the right side there was incarceration of the kidney which required correction by nephropexy.

The author assumes that the abnormal course of the ureter at least favored, if it did not cause the dilation of the pelvis of the right kidney and the stone formation in the left. Therefore in every case of pathologic horseshoe kidney the course of the ureters should be determined and unless serious lesions necessitates the extirpation of one half of the kidney the division of the isthmus should be followed by nephropexy. J. VARELA (Z)

Woodrillo, E. Cystic Kidney (Cystennere).
Trick J. and Chir. 9 385

Three cases of cystic kidneys are reported. The clinical symptoms are mainly anal hemorrhages and colicky pains. The bleeding kidney as extirpated in every case and the patient survived the operation for several years in spite of the fact that the other kidney also underwent cystic degeneration.

The first case was that of a man 30 years old who had a slowly growing tumor in the right kidney region. Cystoscopic examination showed blood in the urine coming from the right ureter. At operation the moderately enlarged organ was found to be completely infiltrated by cysts. None of the cysts was larger than walnut. One of them contained a stone. The renal pelvis and ureter were negative. Four years later the patient, as clinically dead but the formerly impalpable left kidney had become distinctly palpable.

The second case was that of a woman 48 years old who had sudden severe hemorrhage and repeatedly passed small concretions. On the left side was a nodular tumor as large as an infant's head. Cystoscopic examination revealed normal urine coming from the right ureter and pure blood from the left. A left nephrectomy was done. The kidney removed was markedly cystic and showed only slight amounts of parenchyma. The remaining kidney functioned normally soon after the operation but as the succeeding weeks grew rapidly and

became visible in the roentgenogram as a large shadow. Soon thereafter the severe colics associated with hemorrhages recurred. The patient was still alive three years after the operation but occasionally had severe clinical symptoms.

In the third case hematuria and a renal tumor on the left side were the first indications of the condition. The cystoscope revealed blood coming from the left ureter. The urine from the right ureter was normal but the right kidney was palpable as a distinct tumor. Removal of the left kidney was followed by recovery. Nine months later the enlargement of the right kidney had increased considerably. Pneumocystography revealed a large renal tumor with pronounced multiple humps. Transient slight renal hemorrhages occurred. Two years after the operation, the patient was still alive but the symptoms persisted.

Regarding the indication for operation in this type of case Woodrillo takes the position that surgical interference is indicated only by hemorrhage which threatens life and then only if the other cystic kidney is functioning properly. The correct diagnosis can be made in early cases by pneumocystography of the kidney bed. Careful histologic study is important as a true tumor growth may be associated with the cyst formation.

BAUERT (Z)

DeBerne-Lagardo, R. The Histologic Lesions of Experimental Aseptic Hydronephrosis (Les lésions histologiques de l'hydronephrose expérimentale aseptique). *Arch. de med. et de chir. et de org. et pendant urinaires* 9 68

The majority of writers consider the nephritis of experimental hydronephrosis as due to the epithelial lesions but others attribute it almost exclusively to the mechanical factor and regard proliferation of connective tissue as a direct result of infection. English and American pathologists consider the vascular elements of great importance.

The author has caused experimental hydronephrosis in white rats by obliterating the ureters. He obtained aseptic hydronephrosis in six of fourteen such experiments, hydronephrosis with slight infection in three, pyonephrosis in two, suppurative hematonephrosis in four and renal trophy in one. This experimental work led to the following conclusions.

The histologic lesions observed in kidney attacked by aseptic experimental hydronephrosis involve in two successive phases: (1) mechanical distention of the tubes by the retained urine, a distention which is unequally distributed in the tubes; (2) atrophy of the wall of the tubes. In this second phase the connective tissue predominates, the cause of it residing alone in tubular atrophy. Up to the last period the glomeruli remain intact.

In cases of aseptic experimental hydronephrosis the other kidney remains entirely normal.

W. A. BROWN

Bium, V. The Diagnosis of Small Concretions in the Renal Pelvis and Ureter (Zur Diagnostik kleiner Konkretions im Nierenbecken und Harnleiter) *Ztschr f urol Chir* 912, 2, 238

In cases of stones in the kidney and ureter the number of incorrect and doubtful diagnoses based on roentgenograms is no greater than 10 to 5 per cent, but it is just in these cases that the determination of the renal disease and the causes of the attacks of pain is most difficult.

The demonstration of concretions depends upon the shadow picture in the plate. The identification of the shadows as those of renal and ureteral stones and the accurate determination of the position of the stones. A stone may be invisible in the roentgenogram because of its small size or its chemical composition, because it lies in a cavity filled with fluid, or because there is an excessive development of fat in the region of the kidney.

Conditions causing shadows in the kidney region and along the course of the ureter which may lead to errors in diagnoses include calcified glands, phleboliths, calcification of the pelvic ligaments, artefacts on the roentgen plate, and foreign bodies in the lumen.

Concretions smaller than a cranberry seed are difficult to find in the roentgenogram if the subject is fat, but may be the cause of typical colic and haematuria.

In every pyelotomy for a visible concretion the entire surgical pelvis of the kidney should be sounded with suitable instruments in order that all small concretions present may be discovered. Uric acid stones, which are permeable to the rays, may be demonstrated by impregnating them with collargol (Kuemmell), by inflating the renal pelvis with air and by pneumoconography of the kidney bed. As stones in a cavity filled with fluid may escape roentgenological demonstration, second examination should be made after the residual urine has been emptied from the renal pelvis and the bladder.

In every case in which clinical observation suggests the possibility of stone formation the combination of radiographs with the introduction of shadowgraph catheter and pyelography is recommended for the identification of suspicious shadow formations with stones lying in the region of the kidney and in the course of the ureter.

CHAMMAN (Z)

Clinicaru, A. The Transplantation of Free Muscle into the Nephrotomy Wound (Frees Muskeltransplantation in die Nephrotomiewunde) *Ztschr f urol Chir* 9 11 433

Of the various operations on the kidney, nephrotomy is followed by the greatest number of fatalities from secondary hemorrhage. The operations planned to avoid section of blood vessels (Zondeck, Hirsch, Marwedel) have not been successful in improving the conditions. The statistics of Tschalka based on ninety cases of secondary hemorrhage after nephrotomy

only show that secondary asphrectomy was necessary in forty-one cases, and in spite of this procedure eight of the patients died. Of forty-nine patients treated conservatively fifteen died. Packing prevents an immediate secondary hemorrhage but may become loosened. It also interferes with primary healing of the wound. Experiments have been made with resorbable packing material such as fat and fascia, by Kuemmel. Not only a mechanical but also a thrombotic effect has been ascribed to this material.

Muscle substance has been applied to arrest hemorrhage from bone cavities (Schulze), the cranial bones (Borchardt), sinuses (Sieds) and wounds of the heart (Larven). In experiments on twenty dogs the author packed nephrotomy wounds with perforated and free muscle flaps. The implanted muscle flaps healed into the incisions in the kidney relatively rapidly even when the renal pelvis was opened. The flap then became necrotic and organized without any signs of regeneration, while sections projecting into the pelvis of the kidney become necrotic throughout.

From the surgical and functional standpoints it was interesting to note that only a few sutures are necessary for complete hemostasis, the kidney was not injured by the operative procedure or the few loosely knotted sutures and the functional test of the kidney operated upon was satisfactory. The piece of the transplant which projected into the pelvis of the kidney became necrotic and macerated by the urine and passed off. Hence the muscle substance which had healed in was replaced by connective tissue.

The transplant was taken from the extensor muscles of the back.

The procedure described has not yet been applied to man but it is recommended for aseptic cases in which medium large incision is made in the preserved parenchyma, such, for example, as cases of very small stones in the pelvis of the kidney.

JANUARY (Z)

Hanner, G. L. Ureteral Stricture: An Improved Etiological Factor to the So-Called Essential Hematuria. *J Am Urol Ass* 19 11

Hanner reports his experience with cases of renal hematuria of the so-called essential type. He calls attention to the fact that we are indebted for our present knowledge of the subject to the work of Israel West. His views have followed Israel in ascribing the severe attacks of pain and macroscopic hematuria (brightened urinstreaks) present on the right of the capsule, circulatory stasis, or inflammatory congestion or combination of these factors. In every instance there is a background of focal diffuse interstitial or parenchymatous nephritis.

The object of this article is to call attention to the important role that ureteral structure probably assumes in many of these cases. Hanner refers briefly to his experience with ureteral structure in

the causation of various nephropathies and it was that in eighteen of his cases of essential haematuria ureteral stricture was demonstrated.

Israel's main conclusions, ten in number are stated and briefly commented upon in an endeavor to establish a new point of view as to the etiology of the nephritis in a large proportion of these hitherto imperfectly understood cases.

A careful analysis of Israel's fourteen cases leads Hamner to the conclusion that ureteral stricture is probably present in eleven.

Hamner emphasizes the fact that symptomless renal bleeding is often due to renal tumor. While exploratory operations for the determination of the cause of the hemorrhage should be less frequent in the future one should not hesitate to explore a bleeding kidney without delay if even but attempt at diagnosis has failed and the bleeding does not respond to the treatment for idiopathic haematuria.

In sixteen cases a good opportunity was offered to study the results of ureteral dilatation in the treatment of the haematuria. In two nephrotomy as done while fourteen were treated by cystoscopic methods. None and the care of infection such as the teeth and the tonsils. In six cases there was recurrence of the condition but in these the presence of residual foci of infection was suggested. In ten cases, including one in which nephrotomy was done there has been no recurrence. In the later cases no treatment other than was bulb dilatation of the stricture was given.

The article is illustrated by numerous pyelograms. H. A. FOWLER, M.D.

Giordano, A. S. and Bumpus, H. C. J. Carcinoma in the Ureteropelvic Junction: Metastatic from the Prostate. Report of a Case. *J. Urol.* 9: 445.

Metastases from carcinoma of the prostate gland is usually detected first in the lumbosacral region. Of a series of 197 cases in which roentgenograms were made eighty-four (8.4 per cent) showed metastasis in the bones. The next most common sites of metastasis are the lymphatics which drain the prostate and the course of the large pelvic blood vessels along which are several groups of lymph nodes. The nodes at the bifurcation of the iliacs are usually the first to become involved. From there, the lymph stream goes directly to a second group located on the sacral promontory and then along the perivertebral nodes. Extension by this route often occurs so rapidly that the supraceliac lymph nodes are involved before the original malignancy is suspected.

In about 8.4 per cent of the patients in whom metastases are demonstrable the lymph nodes on the left side of the neck are affected. Enlargement of these lymph nodes suggests that the stomach is the original focus particularly in the per cent of cases in which malignancy of the prostate does not cause urinary symptoms.

A form of metastasis which occurs only rarely in carcinoma of the prostate is metastatic in oliviform of the abdominal viscera through the blood stream. In the case reported in this article, metastases were found in the periprostatic and vertebral lymph nodes and in the left kidney and the ureter close to the renal pelvis. After the application of

45 mg-hrs of radium the patient, a man aged 63 years developed marked gastric, intestinal, and cardiac symptoms, failed rapidly and died on the sixth day.

At autopsy numerous metastatic nodules were found scattered throughout the pleura and lungs. The perivertebral lymph nodes along the lumbosacral region were extensively affected and covered the aorta from the bifurcation to the first lumbar vertebra. The left kidney weighed 30 gm. In its upper pole was an infarct which was found on serial section to be due to metastatic carcinoma cells plugging a small blood vessel. Two grayish nodules discovered at the ureteropelvic junction were composed of the same type of undifferentiated epithelial cells.

The bladder did not present any gross abnormalities except a rough granular area about 3 cm in diameter in the base which was found on section to be direct carcinomatous infiltration. The prostatic gland was moderately enlarged and could not be shelled from its bed. It was firm in consistency and its cut surfaces were gray and granular. The lymph nodes surrounding the prostate were also infiltrated by carcinoma cells. Careful examination did not reveal metastasis to the bone.

The history and the clinical and laboratory findings of this interesting case are given in detail. The authors' conclusions are summarized briefly as follows.

The metastases to the pelvis of the kidney in this case may be interpreted as illustrating the direct lymphatic connection to the prostate bladder and the kidney and may be considered evidence that infections of the bladder reach the kidney not by the lumina of the ureters, but by the lymphatics. However this does not seem probable, as the lymphatics of the ureters were not involved. Moreover so far as we know this is the only case reported in the literature in which carcinoma of the prostate metastasized to the renal pelvis. This extreme rarity should be strong presumptive evidence that direct lymphatic connections between the lower and upper urinary tract do not exist and that infection does not travel in this manner. Otherwise with the large number of neoplasms of the bladder and prostatic metastases to the kidney would occur more often.

In this case the presence of the cancer cells in the blood vessels of the lungs and the metastatic renal infarct could seem to demonstrate that the malignancy was carried through the blood stream to the ureter rather than by the lymphatics, a route probably travelled by many so-called ascending infections.

EDWARD F. HIRM, M.D.

2 Most of the cases with positive culture of streptothrix differed clinically from the others in that the urethral discharge was distinctly mucopurulent.

3 In eight of the ten cases in which clinical cure was obtained cultures were negative for streptothrix 4 weeks after the suspension of all treatment.

4 Ten to 77 per cent of all cases in which the streptothrix was demonstrated were relieved of the urethral discharge by specific cone therapy. Supplemental prostatic massage was necessary in only three.

5 Cases responded to a hygienic, astringent therapy rapidly or not at all. Of the eight cases in which both a clinical and a bacteriological cure was obtained, seven were given ten injections or less. The eighth case received fifteen injections.

6 Ten cases showed clinical, but not cultural, cure after fifteen injections.

7 Three cases showed practically no change after twenty or more injections.

FORWARD F. HAYS, M.D.

Troenkle J. L. The Pathology and Mechanism of Prostatic Hypertrophy. *J. Urol.* 9: 43.

The author summarizes the various new theories regarding the pathology and mechanism of the changes occurring in prostatic hypertrophy. The subject is discussed under the following headings: (1) the mechanism of the changes in the urethra occurring in prostatic hypertrophy; (2) the effects of the bladder and (3) the changes in the upper urinary tract and their special mechanism.

The progress made in prostatic pathology leads to the conclusion that the so-called prostatic hypertrophy is really a hyperplasia of the periurethral glands. The prostate itself undergoes atrophy through compression by the growth intruding upon it or primarily as physiological senile process occurring in advanced life.

Prostatic hypertrophy cannot be considered disease. The true pathologic process develops in the secondary changes the urinary tract caused by proliferation of the periurethral glands.

The changes the same home and urinary of the urethra are the result of unopposed and antagonistic forces of which the direct pressure of the intruding glands, the indirect influence of the changes in the bladder upon the urethra and the anatomical peculiarity of the latter are the most important. The part of the urethra which is directly subjected to moulding by the growth is the supra-montane portion of the prostatic urethra.

The muscular peristalsis of the urethra suffers gradual loss of elasticity. The most noticeable changes are observed in the so-called longitudinal muscle which is subject to direct pressure and distortion in the growth.

Two types of intrusion of the growth into the bladder may be distinguished: (1) the direct and

the indirect. Direct invasion occurs near the sphincter of the bladder and is associated with alterations in the symmetry of the bladder and the outline of the phallus. This is not observed in the indirect invasions, which raise the entire floor of the bladder without affecting its symmetry directly.

The pathologic middle lobe formation has nothing common with the anatomical middle prostatic lobe.

The alterations which take place in the bladder are due to the antagonistic forces the quality and the degree of obstruction and the capacity of the bladder to resist the effects of obstruction. The early stages of bladder in eminent are marked by an increased muscular activity. In the later stages of growing disproportion between obstruction and resistance distention and atrophy of the bladder are combined with impairment of muscular activity.

The conception of back-pressure as the primary cause of the changes occurring in the upper urinary tract is inconsistent with the anatomical and physiological peculiarities of the bladder and the ureters. Contraction of the bladder prevents rather than causes urinary reflux, and in a tonic bladder urinary reflux is still less probable.

According to Tandler and Z. Clerikandl, advanced bladder distention, prostatic fibrosis, compression and narrowing of the ureters which in turn may cause obstruction of the downward flow of urine and be followed by secondary enlargement of the parts above the stricture.

The early stages of renal in eminent occurring prostatics are marked by congestion of the kidneys associated with nocturnal polyuria and are followed by gradual destruction of the kidney substance with the symptoms of azotemia and hyposthenuria.

The cystoscopic picture of an enlarged interureteral ligament extending beyond the orifices of the ureters as observed in the later course of prostatic hypertrophy is suggestive of a complication in the upper part of the urinary tract.

FORWARD F. HAYS, M.D.

Harris, S. H. Prostatectomy: A Review of a Recent Series of 146 Cases with Five Deaths. *Med. J. Australia*, 9: 41, 40.

The author reviews a series of 146 cases treated by prostatectomy during a five-year period in which there were five deaths, a mortality rate of slightly less than 3.5 per cent. The deaths were due to embolism, circulatory failure, secondary hemorrhage, exhaustion and uremia respectively.

Cystotomy, as performed in twenty-seven of the cases, and preliminary cystotomy in thirty. Suprapubic prostatectomy as done in all the cases. Squire method of excision being used. The average age of the patients was 60 years, the oldest 86 and the youngest 49.

Narcotic or enema except 33 pt. of salt solution was administered until the fourth day. Then 1 oz. of castor oil by mouth and 6 oz. of warm olive oil

by rectum or given by bladder irrigation of any kind was used during the first fortnight. The majority of the patients began to pass urine naturally from the eighth to the tenth day. The author urges the use of a glass tube for bladder drainage instead of rubber tube. T. J. Fox, M.D.

Ward R. D.: Cyst of the Epididymis. *Lancet* 9 1901, 100.

Cysts of the epididymis are not rare and may reach the size of hydroceles. They are frequently bilateral. Monod and Terrillon divide them into two groups: (1) small cysts lying above the globus major and (2) larger cysts, so called spermatoceles which are more closely related to the testis.

The former which are the important ones are common in old men, whilst the latter are usually found on the inner surface of the globus major. They are vesicle and sac-like and range in size from that of a pinhead to that of a pea. Their pathogenesis is uncertain. They may arise from vestigial remnants

and result from trauma or inflammation. They are so common and require no treatment.

The larger cysts are of clinical importance. Their pathology is still uncertain. They are believed to originate between the under surface of the globus major and the upper surface of the testis, encroaching upon the epididymis. As they show communications with the spermatic ducts and contain spermatozoa, they may be due to partial dilations of the excretory duct of the testis. They appear to be retention cysts. The usual amount of fluid contained in them is about 5 oz. but much greater quantities have been found.

These cysts are differentiated from hydroceles of the testis by greater softness, palpable localization, the position of the testis, the presence of spermatozoa in the fluid, the findings of transillumination and conclusively by tapping.

The palliative treatment consisting of tapping if recurrence develops, orpation is indicated.

LOUIS NEWELL, M.D.

SURGERY OF THE EYE AND EAR

EYE

Brumm S. A. The Relation of Orbital Affections Due to Nasal Conditions. *Personl M J* 92, 11, 14

Orbital affections due to nasal conditions are favored by deflection of the nasal septum, especially opposite the middle turbinate abnormality in the size and position of the middle and superior turbinates, and faulty drainage and ventilation. These cause an intranasal pressure which produces chronic congestion which is followed by hyperplasia, especially of the basement membrane and eventually blocks the posterior sinuses. Infection may then take place and cause an inflammatory process. The latter is generally exudative, rarely suppurative.

3. Olfactory filiation spreads by continuity of the tissues of the optic nerve and its meninges. In many cases there is a history of recent coryza or a prior influenza, and in a few the history of an old intermittent rhinitis with severe headache but without mucopurulent discharge from the nose. The object findings are exophthalmos, choked disk, engorgement of the retina, and loss of the color field. The characteristic symptoms are those of rhinitis, uveitis, or retinitis.

Local treatment may consist of shrinkage of the turbinates and the use of the vacuum, but the patient should be watched most carefully by the ophthalmologist as operation may become imperative. Surgical treatment may consist of straightening deflections of the septum, turbinectomy, rhinoid excision and sphenoidectomy. For hyperplastic types with infection the author advocates the use of autogenous vaccines. An X-ray examination should be made to determine the presence of anatomical abnormalities.

JAMES P. FITZGERALD, M.D.

Shoemaker W. T. Some Observations on Orbital Growths. *Reports of Three Cases. Personl M J* 92, 11, 10

A college student aged 17 years had pain for six days in and around the left eye. The lid was slightly swollen, the palpebral fissure a trifle widened, the eyeball protruded, and the movement of the eyeball limited to the temporal side. The pain was increased when the eyeball was pressed backward. Vision was $\frac{1}{2}$ but subsequently decreased to $\frac{1}{10}$.

Examination of the fundus showed a light blurring of the disk at the temporal side. In the next few days a definite neuritis developed and there was an area of fundus elevation about 5 diopters in excess of the general hyperopia. The overlying choroid and retina were greatly disturbed and the fundus below markedly streaked. The elevated fundus was

shadowed in transillumination and definitely outlined by perimetry. The left nasal chamber was found congested but the right was normal. There was no pus in the nose. Transillumination from the mouth both antra were black. In transillumination through the nose, the left antrum was black but the right was fairly clear. The tentative diagnosis was an unusually thick bone forming the hard palate and possibly a solid growth of the left antrum.

The treatment consisted of mercury unguent to the point of toleration followed by increasing doses of potassium iodide and the administration of arsenic with the mercury. Recovery was rapid, complete and permanent.

Points emphasized are that cases of unproved malignancy should be given thorough treatment with mercury before they are subjected to surgical interference. That mercury is valuable as an absorbent in many conditions other than syphilis and that radical measures should not be resorted to before a sufficient amount of time has been allowed for results from other methods.

In an infant 6 months old hemangioma originated within the orbit and presented at the inner angle of the base of the upper lid. The physical examination revealed enlargement of the thymus gland, evidences of cretinism, enlargement of the spleen, and other signs of endocrine disturbance. On the skin of the lid, directly over the soft protruding mass, was a small nevus. As the tumor increased in size and was accessible and as it was unmistakably a vascular operation was decided upon. Either was administered and the growth extirpated in the usual manner.

Sections of the tumor seemed to confirm the diagnosis of hemangioma, but there was recurrence within a few weeks and the spleen remained enlarged, suggesting strongly that the second growth was sarcoma. Opposed to this, however, was the fact that the child's general condition steadily improved.

The recurrent growth which had extended along the entire base of the upper lid and was larger than the primary growth was thoroughly removed. The second tumor was variously diagnosed as sarcoma, hemangioma, endothelioma, and hemangioma.

Since the second operation there has been no recurrence, and the child has remained well.

The use of radium was considered in this case, but Shoemaker regarded it as too powerful and not sufficiently controllable to introduce close to the eyeball.

In the case of a boy 7 years old the surgical removal of a fair sized encapsulated sarcoma from the orbit was followed by X-ray treatment. Six weeks after the operation active recurrence was noted. The

growth was chiefly on the floor of the orbit, cell forward. Four radial sutures were introduced into the tumor and allowed to remain for 24 hours. Within a week practically all signs of swelling had disappeared. During the subsequent few months the skin of the lower lid softened and the junctions decreased. The process then again became active there as never before. The duration of the condition a fourteen-month and the tumor 1 large listed about three months.

J. M. P. Fitts, G. U. M. I.

Clifford, R. R. Ocular Spontaneous Hemorrhage. *Arch. Ophthalmol.* 1934, 14, 340.

Clifford reports the case of a boy 5 years old who had persistent atrophy of the lacrimal sac connected with infected ethmoidal cells. Cultures of scrapings showed sporotricha and these organisms were isolated in pure culture from an inoculated bit of skin. The patient a girl on large doses of iodides. The end result is not reported but the treatment is made that the lesion healed.

The author reviews a number of similar cases which have been reported in the literature.

Tennant, D. A. U. M. I.

Nease, H. Ocular Sarcoma with Wide Extension Involving the Brain and Hypophyseal Cord. *Arch. Ophthalmol.* 1934, 14, 337.

Penetration of the globe by epibulbar sarcoma is rare and instances in which it occurs almost always extensive damage to the form of the eyeball particularly unusual. A case of the latter type is reported in this article with general review of the literature of the subject.

The tumor patient a man 45 years of age who complained in 1929 of slight irritation beneath the upper lid of the left eye. Though the lump in the eye and in the teeth no disturbance of vision as noted for 4 months. By March 1930 there was marked swelling of the subconjunctival tissue with overlapping of the corneal margin all round suggesting proptosis. The conjunctiva covering the swelling adherent tense and glistening and on it many blood vessels running toward the cornea. The growth itself was firm throughout. The cornea was hazy and small brownish red patch which was lined visible. The lower part of the anterior chamber taken to be hyaline. A total of the iris was visible.

Enucleation performed. Examination of the globe revealed disseminated sarcomatous structure involving practically all of the intraocular tissues. Three months later it became necessary to excise the orbit because of recurrent growth but healing as prompt and at the end of another month there had been no recurrence.

The author draws the following conclusions as to the treatment.

If the growth is freely movable with the conjunctiva over the underlying structures and increases in size slowly local removal is indicated.

If the growth is the least adherent, the globe and considerable margin of conjunctiva should be removed and radium applied.

If the growth is large and there is a history of rapid extension, the orbit should be exenterated.

J. M. P. Fitts, G. U. M. I.

Woods, A. C. and Knapp, A. The Therapeutic Use of Uveal Pigment in Sympathetic Ophthalmia and Its Ophthal. 1934, 14, 330.

The authors report the case of an 8-year-old boy who had an unhealed corneal ulcer and proptosis of the iris, the result of gonorrheal conjunctivitis of three months duration. A weak light perception and tension plus a uveitis. A dose of the defect in the cornea excised the proptosis removed and the cornea covered with a conjunctival flap. Six weeks later the patient returned with sympathetic ophthalmia. A week later the had increased to a sufficient extent to be removed by its then removed.

The patient serum reaction to uveal pigment is negative. Following an immunity history of 100 mg of uveal pigment and injection of 10 mg of mercury the administration of pilocarpine to induce eversion and muscular injections had no effect upon the condition. A course of non-specific protein therapy as then begun but a month continued to grow worse the treatment changed to doses of sodium valyate. These also were without effect.

Three months after the beginning of the symptoms inflammation the patient of uveal pigment began to gradually the eye became better and although there was short exacerbation one month later the general tendency toward improvement, the eye is still becoming more and more from inflammation and the globe is now 100.

The technique of administering the pigment is described in detail. Tennant, D. A. U. M. I.

J. K. C. M. Focal Infection in the Tarsal Canal of a Tuberculous Ophthalmia. *J. Am. Med. Ass.* 1934, 10, 176.

The authors report the case of a girl 10 years of age who had a tuberculous scleritis keratitis diagnosed confirmed by a corneal biopsy.

The tubercular and corneal biopsy examined the negative although the patient operated on at the age of 5 years for corneal adenoma and at the age of 7 had tarsallectomy for repeated attacks of corneal ulcers and several other operations for the removal of remnants of tarsallectomy. These lesions had become so poor that she was unable to recognize another person in the new room.

Jack enucleated the tarsal canal believing them to be the focus of infection. Upon pathologic examination the showed bronchial inflammation hyperkeratosis, and great numbers of tubercles clustered around the crypts. The majority of the latter are epithelioid cells, but some which were larger and contained showed reaction and giant cells.

Following the operation, vision in the right eye improved to 20/50 and that in the left became normal.

The author has been unable to find the report of a similar case in the literature.

JAMES P. FITZGERALD, M.D.

Verhoeff, F. H. and Friedenwald, J. S. Injury to the Cornea and Conjunctiva Due to Fish Bile. *Am J Ophthalm* 9: 857.

As a result of experimental testings of the effect of bile on rabbits it was thought that the corneal opacity originally attributed to fish bile in the case reported was probably due to the use of lead acetate as an eye wash. Verhoeff and Friedenwald therefore warn ophthalmologists against the use of lead acetate in corneal lesions.

THOMAS D. ALLEN, M.D.

Johnson, G. L. A New Method of Removing the Lens in Its Capsule. *Arch Ophthalm* 9: 348.

The author uses two instruments, a shovel spoon and an extraction spoon which are shown. In cuts H inserts one spoon close to the pupillary edge at the top and while making pressure with the other spoon on the lower part of the cornea breaks the zonular fibers above and presses the lens out onto the first spoon. H is not concerned by the loss of small amount of vitreous provided he does not uncover the ora serrata. THOMAS D. ALLEN, M.D.

Blake, E. M. Bilateral Detachment of the Retina in Nephritis of Pregnancy. Reattachment of Retina. *Arch Ophthalm* 9: 386.

In the case reported final vision was 20/50 in the right eye and 20/100 plus in the left and the visual fields were practically normal.

Blake reviews the literature briefly and concludes that ophthalmologic examinations should be made more frequently in cases of pregnancy.

THOMAS D. ALLEN, M.D.

EAR

Hodges, P. C. A New Method of Simultaneous Stereoscopic Observation of Both Mastoids. *Am J Roentgenol* 9: 12, 753.

The author makes stereoscopic exposures of both mastoids on 5 by 7 in films and then mounts these on two pieces of 5 by 7 in celluloid in such a manner that those of one side may be seen stereoscopically above those of the other side. He has found his method simpler than that described by Hill and Thomas in 1911 and equally efficient.

ABRAHAM HARTMAN, M.D.

Gottlieb, M. J. The Indications for the Radical Mastoid Operation. *Am J Surg* 922 XVII, 366.

A foul aural discharge, exposed bone in the middle ear and a decided decrease in hearing singly or altogether do not constitute a definite indication for the radical mastoid operation.

A chronic fetid aural discharge accompanied by headache or vertigo originating in the ear indicates the operation even though hearing is good.

The presence of large obstructing polyps, cholesteatomata or fistulous tracts draining through the mastoid cortex or the posterior bony wall of the external auditory canal constitutes definite indication for operative intervention.

An acute exacerbation of obstruction to drainage in case of chronic mastoiditis warrants radical treatment.

The development of facial paralysis as a complication of chronic otitis media is a definite indication for the radical mastoid operation.

Cases illustrating the occurrence of fistulous tracts and signs of obstruction to drainage in the middle ear are presented in detail.

The radical operation should never be done unless a functional test of the labyrinth has ruled out the presence of latent chronic labyrinthitis.

MATTHEW H. CORLETT, M.D.

The diagnostic and prognostic value of some associated symptoms in trigeminal neuralgia. E. I. SANI. *Segio med.* 9, lxix, 437.

Plastic surgery of the head and neck. F. RIMOV. *Canadian M. Ass. J.* 9, xx, 797.

The delayed pedicle flap—plastic surgery of the face and neck. G. B. NEW. *Minnesota Med.* 9, 72, [165].

Bilateral bony ankylosis of the temporomandibular joint of foetus origin. A. MALLARA. *Policlin.* Rome, 9, 2, xix, sec. ch. 50.

The anatomy and physiology of the temporomandibular joint. P. DORRILL. *Policlin.* Rome, 9, xix, sec. part, 557.

Universal jaw dilator as an adjunct in the treatment of mandibular ankylosis. R. H. IYR. *Ann. Surg.* 9, lxxv, 647.

Emergency apparatus for fractures of the jaw. A. CANALE. *Semana med.* 9, 2, xix, 89.

Carcinoma of the tongue with metastases in the cervical glands under treatment with radium and the X-ray. W. E. LEE. *Ann. Surg.* 92, lxxv, 651.

Neck

The prevention of simple goiter in man. O. P. JONES. *All. Nation's Health.* 92, iv, 656.

The effects of hypothyroidism. H. H. BETT. *Illness M. J.* 9, 2, xix, 337.

The radiation treatment of hyperthyroidism and the basal metabolism test. H. SWANBERG. *J. Iowa Stat. M. Soc.* 92, xx, 443.

The history and symptomatology of iodothyroidism (Kocher) chronic iodine goiter cachexia (Roemer) constitutional iodism (Rühlert). L. FRIEDMANN. *München. med. Wchnschr.* 92, lxx, 377.

Esophagobulbar goiter. C. F. NASSAU. *Ann. Surg.* 1922, lxxvi, 640.

Clinical experiences in 840 operations for goiter with special consideration of recurrent goiters and operations for recurrence. J. DUBS. *Schweiz. med. Wchnschr.* 92, lx, 93. [165]

Recurrence of goiter. H. KLOSE and A. HELLWIG. *Klin. Wchnschr.* 9, 4, 885. [166]

Branchial fistula. B. LIPSHUTZ. *Ann. Surg.* 19, lxxvi, 645.

The treatment and prognosis of carcinoma of the larynx. W. ORLAND. *Ann. Otol. Rhinol. & Laryngol.* 9, xix, 60. [166]

The treatment of cancer of the larynx by surgery and by radiation (X-ray and radium). A. G. TAPPS. *Arch. de med. chir. y especial.* 9, ix, 577.

Total laryngectomy according to the Moore-Portmann and Dumas methods. G. TITTO. *Rassegna internaz. di chir. terap.* 92, ix, 388.

The technique of total laryngectomy. R. DOTY. *Arch. de med. chir. y especial.* 9, ix, 600.

SURGERY OF THE CHEST

Chest Wall and Breast

Innervation of the thorax. H. O. ALFVON. *J. Am. M. Ass.* 92, lxxv, 840.

The etiology of empysemic pleural effusion. N. E. CLARK. *J. Am. M. Ass.* 92, lxxv, 59.

Pleurexy with effusion as a complication of artificial pneumothorax. H. DIXIE. *Klin. Wchnschr.* 9, 4, 647.

Paralysed pleurexy thoracotomy. J. C. FROIDA. *Rev. de med. y chir. de la Habana.* 9, xxvi, 760.

A study of the clinical and radiological findings in pleurexy. M. B. TITCHELTON and P. F. TITCHELTON. *J. Missouri State M. Ass.* 92, xix, 465.

Chronic empyema in the United States army. W. L. KELLER. *Ann. Surg.* 92, lxxv, 549, 700.

The present-day treatment of empyema. V. H. CAL. *Médec. Bélar.* *Klin. Chir.* 92, cxviii, 98.

The treatment of pleural empyema. W. KAHN. *München. med. Wchnschr.* 9, 2, lxx, 278.

Pleurobronchial and pleurocutaneous fistula. J. A. SHERIDAN. *Ohio State M. J.* 9, xvi, 739.

Cystic disease of the breast. J. E. THOMPSON. *Texas State M. J.* 9, 2, xvi, 344.

The clinical picture of the diffuse type of chronic cystic mastitis (the so-called breast). J. C. BLOOMGARDEN. *South M. J.* 92, xv, 907.

Bleeding breasts. 11th. few cancer statistics from the Druggan Hospital. J. K. HALL. *North. Mag. f. Lægevidensk.* 192, lxxv, 59. [166]

Cancer of the breast: the combined treatment of surgery, radium, and the X-ray. J. T. MOORE. *Texas State M. J.* 92, xv, 355.

Fifty-one cases of postoperative recurrence of breast cancer. I. L. ROUX. *Bull. Rev. internat. de med. et chir.* 92, lxxv, 7.

The treatment of recurrent inoperable carcinoma of the breast by radium and the roentgen ray. B. J. LEE. *J. Am. M. Ass.* 92, lxxv, 574. [167]

Does radiation enhance postoperative recurrence of carcinoma of the breast? M. J. SETHFIELD. *J. Radiol.* 9, ix, 476. [167]

Trachea and Lungs

The intratracheal injection of oils for diagnostic and therapeutic purposes. H. J. COOPER and H. FRIED. *J. Am. M. Ass.* 92, lxxv, 739.

Tracheobronchitis complicated by an effusion of blood. G. SERRA. *Ann. ital. di chir.* 92, 4, 66. [168]

Intratracheal stricture. E. WOLFF. *München. med. Wchnschr.* 9, lxx, 38.

A case of papilloma of the trachea. J. DUNAS. *Grand. Med. Press.* 9, cxv, 400.

Foreign bodies in the upper air and food passages. H. B. GRAM. *California State M. J.* 9, xi, 390.

Foreign bodies in the bronchus and oesophagus. C. F. BOWEN. *Am. J. Roentgenol.* 92, ix, 705.

The removal of paper fastener by direct peroral bronchoscopy after intubation for 1 entry one month in the left bronchus. H. TILLER. *Brit. M. J.* 9, 4, 973.

The X-ray in the diagnosis of pulmonary tuberculosis. J. D. MACRAE. *South M. J.* 92, xv, 870.

Surgical intervention in pulmonary tuberculosis. G. SATO and J. M. ALLARD. *Semana med.* 19, 2, xix, 63.

Artificial pneumothorax complicated by hydro-pneumothorax and pleurexy with effusion on the untreated side report of 14 cases. L. S. PATTIN. *J. Am. M. Ass.* 9, lxxv, 607.

A new apparatus for thoracostomy and for pneumothorax. F. ROSEN. *Policlin.* Rome, 92, xix, sec. part, 59.

The indications for operation in lung abscess. M. RAYNER. *Spatial.* 19, 2, xix, 60.

Lung abscess treated by bronchoscopy. C. N. GILLIES. *Am. Med.* 92, xix, 64.

- The clinical and surgical significance of small intestinal infarctions in the pyloric sphincter C KELLER Arch f klin Chir 92 xxx, 402
- The advantages of estimating the fasting stomach in gastro-intestinal diagnosis E H GUTTEN Ann Clin Med 9 2, 4, 70
- Gastroscopy SCHEIDT Jahrbuch f d deutsch Naturf Verz Leipzig 92
- The opaque meal as present-day alias in gastric lesions S G SCOTT Lancet 922, com, 59
- Two cases of severe chronic gastritis (ulcerati) (1718) cured by operation A BONGARD Arch f Verdauungskraunkh 922, xxx, 71
- The pathogenesis of gastric ulcers GARYS Jahrbuch f d deutsch Nat f Verz Leipzig 92
- The pathogenesis of gastric and duodenal ulcer D T HILL Mo Suppl med 9 lxx, 44
- Ulcer of the greater curvature of the stomach causing ulcer formation K SACHS Hosp Tid, 9 lvi, 597
- Borborygmus in the treatment of gastroduodenal ulcer LACOUR Bull Acad de med de Par 9 lxxviii, 57
- A review of only five cases of peptic ulcer treated surgically O MONTANO Rev de med y chir de l Habana 9 2, xxxv, 75
- The indications for surgical treatment in gastric hemorages from gastric and duodenal ulcers HORN Jahrbuch f d deutsch Naturf Verz Leipzig 9
- Indications, methods, and operative results in chronic gastric ulcer without pyloric stenosis L PINO Arch de med chir y especial 9 xv, 55
- The surgical treatment of ulcer of the stomach W W KELLER Arch 922, 244
- A fibrosis of the wall of the stomach adherent to an ulcer of the lesser curvature J J HANDELMAN Nederl Tijdschr Geneesk 9 lvi, 97 [172]
- Bleeding from the stomach after gastro-enterostomy A KROCK Deutsche Ztschr f Chir 9 clix, 346
- Gastro-intestinal cancer J M BELL Med Herald, 922, xii, 36
- Carcinoma of the stomach B B D N NEHERUS State M J 9 vii, 905
- Carcinoma of the stomach J A HARRISALL Ann Surg 922, lvi, 67
- A case of anastomotic occurrence of primary carcinoma and colloid cancer of the stomach S WITTMANN Deutsche Ztschr f Chir 9 clix, 346
- The early diagnosis of cancer of the stomach J LOE M Ohio Stat M J 92 xvii, 764
- The surgery of gastric cancer L A BOLAND J Med Ass Georgia 9 2, xi, 430
- Repeated interventions in gastric carcinoma A DILLON and C DUNN Rev de chir Par 9 xli, 239 [172]
- The results of gastrectomy COPALLO Bol y trab soc de chir de Buenos Aires 9 84
- A method for the plastic reconstruction of the stomach A HORN Zentralbl f Chir 9 xlv, 1477
- Medical management following gastro-intestinal surgery I F GIBSON J Michigan Sta M Soc 9 xvi, 450
- The early diagnosis of invagination L ZACHS Minn ches und Weibsch 9 lvi, 408
- Intestinal obstruction in premature infant case report R C WOODARD South M J 92 xi, 95
- Intussusception in children report of case T F CAHO Kentucky M J 9 xii, 701
- A case of intussusception P J FRYLO Boston M & S J 9 cxcviii, 638
- Two cases of intestinal invagination A KA Poli chs Rome, 9 xcix, xci, chf 554
- The lethal agent in acute intestinal obstruction R W GILKIN J Am M Ass 9 lxxx, 58
- A case of actinomycosis of the small intestine L UZZA M Arch de med chir y especial 9 xv, 35
- Inflammatory tumors of the small intestine CARVALLO Bol y trab Soc de chir de Buenos Aires 9 2, 1, 85
- Neoplasms of the small intestine O WILSON Ber klin Chir 9 cxcv, 3
- Sarcoma of the small intestine J DOUGLAS Ann Surg 9 lxxvi, 663
- Sarcoma of the small intestine CORRALLO Bol y trab Soc de chir de Buenos Aires 9 1, 80
- A case of removal of pta from the third part of the duodenum L E HUGHES Med Press 9 cxcv, 431
- The roentgenological diagnosis of duodenal ulcer M HAASE Arch de med chir y especial 9 xv, 35
- Ulcer of the duodenum VON BERGMANN Jahrbuch f d deutsch Nat f Verz Leipzig 9
- Difficulties in the diagnosis of ulcer of the duodenum A CADE Bruxelles med 9 lvi, 3
- Resection of ulcer of the duodenum N TADIMACON Rev Assoc med argent 9 xciv, 55
- Peptic ulcer of Meckel's diverticulum intestinal hemorrhages E C MERRY and R DUNN Rev de chir Par 9 xli, 536
- A reform of the surgical treatment of duodenal ulcer A L LOCKWOOD Canadian Pract 9 xli, 458
- The operative treatment of peptic ulcer of the jejunum H von HANSEN Deutsche Ztschr f Chir 9 2, cxcii, 3
- Multiple granuloma noduli in the ileum W E LEE Ann Surg 9 lxxvi, 65
- Tuberculosis of the ileocecal region, an special reference to the cecum C S MINNIE North east Med 9 xxi, 406
- Neocolostomy and exclusion operations in dilatation of the caecum and colon H ILLON Arch f Verdauungskraunkh 9 xxi, 95
- Constipation in the adult W J SMACHTER Kentucky M J 9 xii, 779
- Chronic intestinal stasis and its treatment W A LAZAR Internat J Surg 9 2, xciv, 38
- Two cases of constipation treated surgically A LAZAR la fac de med Univ de Montevideo, 9 2, vii, 402
- An unusual case of intestinal rupture J R SPARKS J South Carolina M Ass 9 xvii, 114
- The irritable colon P H ROSE J Lancet, 9 xli, 557
- The surgical treatment of chronic ulcerous colitis A KROCK Polska lek-medik handl 922, lvi, 213
- The surgical treatment of chronic catarrhic dysentery W I LUTIN Chicago M Rec xli, 43
- The surgical complications of intestinal helminthoses R MACIAR Rev de med y chir de la Habana 92 xvi, 67
- The importance of scabies in surgical practice O CONVOZZI Rassegna internaz de chir temp 922, 445
- Two cases of gastric intestinal perforations C MATTROLO Policlin Rome, 922, xvi, xxi, chf, 6
- On the treatment of non-malignant affections of the colon W A LAZAR Lancet, 922, com, 14 [173]
- The treatment of acute obstruction from cancer of the colon J P LOCKHART Vancouver Lancet, 9 2, com, 7 [173]
- The results of the operative treatment of carcinoma of the large intestine K JELAYATZ Ber klin Chir 9 cxcvii, 9

- Pseudotumors of appendicular origin. *M. STILIA*
Med. Rev. Mod. d. Roma, 1922, 22, 79.
- Pseudotumors of appendicular origin. *B. ROBERT*
Ann. ital. di chir. 1922, 1, 704.
- A case of caryons vermicularis in the vermiform appendix.
W. L. HANVETT. Indiana M. Gaz. 1922, 174, 479.
- Intussusception of the appendix. *C. E. FARR. Ann. Surg.* 1922, 135, 669.
- Familial appendicitis. *O. CAROZZI. Policlin. Roma*, 1922, 29, 2nd ser. 485.
- The diagnosis of appendicitis. *M. J. ALLEN-ROSE. J. Iowa State M. Soc.* 1922, 22, 440.
- The differential diagnosis of lobular pancreas and appendicitis in children. *F. D. ADAMS and H. J. BROWN. J. Am. M. Ass.* 1922, 800.
- Appendicitis with cholesterin calculi. *A. V. ARNO. An. Fac. de med. Univ. de Montevideo*, 1922, 11, 307.
- Chronic appendicitis. *G. KRAMER. J. Iowa State M. Soc.* 1922, 22, 437.
- The appendix and its removal. *E. MAYOR. Seneca. med.* 1922, 100, 401.
- The so-called regeneration of the appendix and the process of cicatrical repair. *S. DINTER. Ann. ital. di chir.* 1922, 1, 686.
- Adenoma of the hepatic flexure of the colon. *J. A. HART. Well. Ann. Surg.* 1922, 135, 674.
- Proctogel being in case of inoperable carcinoma of the sigmoid colon treated by colostomy. *G. P. MILLER. Ann. Surg.* 1922, 135, 646.
- Rectognostic endoscopy: its technique, indications, and diagnosis and therapeutic applications. *F. GALLART. J. Montev. Arch. esp. de enfer. y apar. digest.* 1922, 1, 341.
- A large rectoscope. *R. FROCCIERO. Bol. y trab. Soc. de ciruj. de Buenos Aires*, 1922, 1, 87.
- T. cases of rupture of the rectum communicating with the peritoneal cavity. *H. O. SERRA. Med. Press*, 1922, 1, 100.
- Acute proctitis causing general peritonitis and death. *W. H. DU PUE. Brit. M. J.* 1922, 1, 107.
- A scaly operation for abscesses about the rectum. *W. A. FANSTON. J.-Lancet*, 1922, 1, 107. [174]
- Cancer of the rectum. *L. E. MOON. Nebraska State M. J.* 1922, 1, 189.
- Carcinoma of the rectum and pelvic colon: age and incidence and prophylaxis. *J. R. PETERSON. J. Am. M. Ass.* 1922, 1, 189. [174]
- An apparatus for the accurate placement of the central ray in the roentgen irradiation of carcinomas of the rectum. *E. SERRA and W. KRAMER. Zentralbl. f. Chir.* 1922, 21, 100.
- A historical review of anorectal diseases: the limitations and technique of local anesthesias in rectocolic operations. *R. G. GALT. Ohio State M. J.* 1922, 1, 189.
- The postoperative care of rectal disturbances. *C. J. DINTER. Internat. J. Surg.* 1922, 1, 100.
- Fistula of the anus. *P. CARRO. Bol. y trab. Soc. de ciruj. de Buenos Aires*, 1922, 1, 100.

- What clinical manifestations are sufficient to justify the diagnosis of gall bladder troubles. *W. F. NICHOLS. J. Med. Ass. Georgia*, 1922, 22, 415.
- Biliary tract infection and its differentiation from other. *C. L. MITT. J. Indiana M. Ass.* 1922, 174, 474.
- Several cases of cholelithiasis: the relation of the relation to splenomegaly and acute yellow atrophy of the liver. *A. TIERCE and C. RIVALLAN. Brit. M. J.* 1922, 1, 100.
- The Lyons-Maitre method of cholecystectomy: an analysis and its diagnosis and treatment. *S. C. BENTLEY. Ann. Surg.* 1922, 1, 100.
- The effect of magnesium sulphate on the secretion of bile: an experimental study. *L. B. FRANK. J. Am. M. Ass.* 1922, 1, 100.
- A clinical survey of recent results attained by non-surgical drainage of the pathologic gall bladder. *O. M. NILES and H. N. KAUER. J. Med. Ass. Georgia*, 1922, 22, 417.
- Clinical notes on the diagnosis and treatment of gall bladder disease. *I. H. LARRY. Boston M. & S. J.* 1922, 1, 100.
- Cholelithiasis cystica. *L. BENTLEY. Arch. f. path. Anat.* 1922, 1, 100. [174]
- The diagnosis and treatment of cholelithiasis. *R. MORGAN. Brit. M. J.* 1922, 1, 100. [175]
- When diseased gall bladder becomes surgical. *L. C. GRANGER. New Orleans M. & S. J.* 1922, 1, 100.
- The technique of exposing the biliary passages. *C. WILLIAMS. Arch. franc. belges de chir.* 1922, 1, 100. [175]
- Cholecystectomy versus cholecystostomy. *T. C. D. M. M. J. Med. Ass. Georgia*, 1922, 22, 414.
- The primary closure of the abdominal cavity after cholecystectomy. *HILLER. Jahrbuch f. deutsch. Nalst. Acute, Leipzig*, 1922, 1, 100.
- Surgical therapy and its results in gall bladder disease. *R. R. GRANGER. CHARLES M. Ass. J.* 1922, 1, 100.
- Primary adenocarcinoma of the gall bladder. *C. LOONEN. Bol. y trab. Soc. de ciruj. de Buenos Aires*, 1922, 1, 100.
- The direct determination of lipase within the small intestine: test for pancreatic function. *J. BETA. M. J. Am. M. Ass.* 1922, 1, 100.
- Concomitant absence of the spleen. *S. McLEA and H. R. CHUR. Am. J. M. Sc.* 1922, 1, 100.
- Diseases of the spleen. *W. J. MAYO. Ann. Clin. Med.*, 1922, 1, 100.
- The pathology of the spleen. *W. C. CHUR. Ann. Clin. Med.* 1922, 1, 100.
- Familial hemolytic splenomegaly. *S. O. CORBIN. Med. J. Australia*, 1922, 1, 100.
- Clinical symptoms of enlargement of the spleen in children. *H. D. STIMPSON. Med. J. Australia*, 1922, 1, 100.
- Multiple abscesses of the spleen, splenectomy recovered. *DR. VALLE. Bol. y trab. Soc. de ciruj. de Buenos Aires*, 1922, 1, 100.
- Encysted leishmaniasis of the spleen. *P. LOPEZ. Ann. Clin. Med.* 1922, 1, 100.
- Penetrating abdominal wounds—a series of five cases in the military service. *H. W. JONES. Md. Surgeon*, 1922, 1, 100.
- Abdominal trauma. *R. O. SHERMAN. New Orleans M. & S. J.* 1922, 1, 100.
- Severe intra-abdominal trauma: what symptoms case report. *W. H. HARRIS. South. M. J.* 1922, 1, 100.
- Acute conditions of the abdomen requiring surgical interference. *L. C. FRANK. J. Med. Ass. Georgia*, 1922, 22, 417.

Miscellaneous

- Liver, Gall-Bladder, Pancreas, and Spleen
- Clinical notes on hybrid cysts. *A. MOUL. An. Fac. de med. Univ. de Montevideo*, 1922, 1, 100.
- America abscess of the liver. *E. BARNETT. Presse med.* 1922, 1, 100.
- Hepatic abscess: evaluating the brackets. *J. O. CORBIN. Ann. Surg.* 1922, 1, 100.
- Primary carcinoma of the liver: report of three instances. *J. A. LECHE and D. G. RICHIE. Ann. Clin. Med.* 1922, 1, 100.

Findings in diagnosis of chronic diseases of upper abdomen
J B DEVEREUX Internat J Surg 9 xxiv 383
Phantom abdominal tumors N FLEWELDER Med
Press 9 2, 427

The parotocolic fold (Jackson membrane) MUTTL
and FORTCHER. Rev de chir Par 1922 xli, 5
Hemoperitoneum with bluish discolored umbilicus
H M STACHURSKI J Am M Ass 922 xxix, 84

SURGERY OF THE EXTREMITIES

Conditions of the Bones, Joints, Nerves,
Tendons, Etc

Injuries of the bones and joints in the roentgen picture
K BURMANNA Wien med Wochenschr 9 lxv 505
Osteosarcoma E P C WATTS Arch Int Med 9
ix 820
Pseudotuberculosis and osteosarcoma S P STORKE
Polizin Rome 91 xxv 323 324 505
Osteosarcoma (nuclei procarcinoma) Wiersma'sche
Viers Schoenberg disease G G D is Arch Surg
922 440

Orthopaedic report of case, with sarcomatous
of eleven different fractures in the same patient D M
GLOVER Arch Surg 9 464

Rickets is infectious and pathogenic G L FARR
Med Press 92 300

The calcium and phosphorus concentration in the serum
of infants with rickets or condition simulating rickets
P F THOMAS Am J Dis Child 922, xxv 35

The pelvis of rickets children as the precursors of the
rickety flat pelvis of women H T ASHBY Brit M J
922 ii, 905

Ultraviolet radiation in rickets PACTU Am J Clin
Med 922 xxix, 797

Decalcification of teeth and bones and regeneration of
bone through diet P R HOWE J Am M Ass 9
lxvii, 365

Fatty diet and its relation to the structure of bone
P G SAMPSON J Am M Ass 922, lxxx, 563

Epiphyseal and other bone diseases in adolescence
Sovraso Jahrbuch d deutsch Naturf Aerzt Leipzig 922

A case of Paget's disease C DOVOVAN Rev Assoc
med argent 922 xxxv, 458

Paget's disease of the bones (osteitis deformans) H I
GOLDENBERG Med Times 9 2, 4, 70

A case of Paget's disease J Niv Sel Am Fac de
med Univ de Montevideo 9 2, vi, 335

Osteitis deformans G HERRICH Allg med Zentral
Ztg 92 xxi 305

A contribution to the pathologic anatomy of osteitis
deformans cases juvenalis G REICHER Zentralbl f
Chir 9 2, xli, 447

A peculiar form of tumor like osteomyelitis E MILL
cromo Med Klin 922, xxix 805 [175]

Bone repair following injury and infection F W
BLANCHARD Arch Surg 9 646

Bone atrophy clinical study of the changes in bone
tissue result from non use N ALLISON and B BROOKS
Arch Surg 9 490

Osteoarthritis W A GARRETT Canadian M Ass J
9 2, ix, 808

Slow movement of the joints in the treatment of chronic
infectious joint diseases H BARTER Muenchen med
Wochenschr 9 lxix, 143

Spasms of the rhomboides minor muscle J P REICHL
Lz Am Surg 9 2, lxxvi, 64

The treatment of spastic contractures of the lower
extremities by resection of the posterior spinal roots A
W. STACHURSKI Verhandl d Rom Chir Europäer Ges
Petrograd, 92

The re-education of muscles P KOURNIT Arch
Radiol & Electrotherapy 9 2, xxvii, 89

Report of an unusual foreign body in the arm C F
BAKER Am J Roentgenol 92 ix, 727 [175]

Another case of double ulna and absence of the radius
C MAU Ztschr f orthop Chir 9 2, xli, 355

A unusual relation of the styloid process of the radius
and the ulna G T TYLER, J Boston M & S J
cxviii, 640

Radium therapy combined with bone grafting in case
of sarcoma of the radius L MAYER Bruxelles med
9 iii, 4

Polydactylia syndactylia thumbs having three phalanges
A DRALET Arch franco belges de chir 9
xv 83

Report of case of congenital polysyndactylia L
VERHELLE and J CH. A. VAN Arch franco-belges de
chir 9 2, xvi 934

A preliminary note on the treatment of contracted
fingers and of some cases of catarrh by mild high fre-
quency currents and violet rays C E SKELL Arch
Radiol & Electrotherapy 9 xxvii, 77

Osteo-arthritis protrusion of the acromioclavicular A L
HEITZLER Arch Surg 9 v 60

Predisposition to the so-called corva vara of adolescence
HARR Jahrbuch d deutsch Naturf Aerzte, Leipzig
9

Non tuberculous arthritis of the hip A BROCA Presse
med Par 922, xxx, 94

Osteochondritis of the upper epiphysis of the femur or
cora plana ROMALINO Med Rera 9 xvi, 26

Suppurating arthritis of the knee C L FARR Ann
Surg 9 lxxvi 67

Osteomyelitis of the head of the tibia treated by an
etched skin-skin flap H H M LYLE Ann Su 4
9 2, lxxvi, 635

Fractures and Dislocations

Fractures A ASHALL Med J Australia, ii, 53

An experimental study of the healing of fractures L
W. EL Arch Surg 922, 327

The principles of fracture treatment W VA HOO
Am J Surg 92 xxxvi, 257

An emergency universal splint for fractured long bones
H C MARLAND J Am M Ass 922, lxxx, 1890

The treatment of fractured clavicles W L BELL
Ann Surg 922, lxxvi, 595

Fractured clavicles T E RICHARDS J Am M Ass
9 2, lxxx, 830

Spontaneous dislocation of the wrist H BUCHHEIM
Berl klin Chir 922, cxvii, 74

Rare wrist injuries E DELAHOY Arch franco belges
de chir 9 xiv 846

The trans-cubital route for the reduction of old
fractures of the elbow BLANCHARD Presse med Par
9 2, xxi, 768 [176]

Compression fractures of the lower end of the radius
J H STEVENS Ann Surg 922, lxxv, 390

Carpal and metacarpal fractures during the year 9 9
and 920 in Swiss Accident Insurance Arch f orthop
Unfall Chir 9 ix, 445

Isolated pelvic fractures simultaneously produced in individuals by common accident. L. R. MARLEY. *Am J Surg* 1922, xxxvi, 78.

The treatment of congenital dislocation of the hip. HAAVENS. *Jahrbuchent d deutsch Naturl Aerzte*, Leipzig, 922.

The operative reduction of old irreducible dislocation of the hip. L. STRUCKER. *Verhandl d Russ Chir Pirogoff Ges*, Petrograd, 9.

Incomplete epiphyseal fractures at the hip. R. WINTER. *Ann Surg* 922, lxxvi, 622.

The diagnosis and treatment of incomplete epiphyseal fractures of the hip. R. WINTER. *Ann Surg* 922, lxxvi, 626.

Necrosis of the proximal fragment in fracture of the neck of the femur and its importance with regard to the hip joint. G. ALEXANDER. *Arch f klin Chir* 922, cxx, 3.

The treatment of fracture of the neck of the femur. ROBERT and BOSCH. *Riforma med* 922, xxxviii, 24.

Immediate operation for fracture of the neck of the femur. A. O. WINTER. *Ann Surg* 1922, lxxvi, 63.

The operative treatment of subcapital fractures of the neck of the femur. R. BO. *Arch f klin Chir* 922, cxx, 394.

Subtrochanteric fractures of the femur: oblique versus any ideal combination. G. G. DUMAS. *Rev de med y chir de H. Hahnemann*, 922, xxxv, 756.

The treatment of fractures of the shaft of the femur. T. A. DIVONA. *J Med Soc N Jersey* 1922, xix, 35.

The results of treatment of fractured femurs in children, with especial reference to Bryant's overhead traction. W. H. COLE. *Arch Surg* 1922, lxxvi, 70.

Fractures of the patella. E. MACIAS DE TORRES. *Prog de la clin*, Madrid, 922, xxv, 35.

Fracture of the internal meniscus and suppurative effusion of the right knee in secondary bone resection of

the meniscus, arthrectomy, and early mobilization. G. ZOGRAFOPO. *Bol y trab Soc de cirug de Buenos Aires* 1922, vi, 263.

Fracture of the leg. I. COFFY. *New Orleans M J* 922, lxxv, 24.

The Delbet lifting plaster for the treatment of delayed union in fractures of both bones of the leg. L. C. MONTGOMERY. *Arch Surg* 922, 425.

Fracture of the tibial space: an experimental study. F. C. BLANCKE. *Arch Surg* 1922, 95.

Lapping fracture of the lower tibia: end of the bone. H. T. LOUWAGH and A. R. MEYER. *Arch Surg* 922, 676.

Injuries to the crucial ligaments and avulsion of the tibial space. C. F. FARVER. *Boston M J* 922, cxxviii, 765.

Surgery of the Bones, Joints, Muscles, Tendons, Etc.

The use of large Reverdin grafts in the healing of chronic osteomyelitis. M. R. RICH. *Bull Johns Hopkins Hosp* 922, 9.

Paralysis of the shoulder girdle. F. BUCHHEIT. *Arch franco-belges de chir* 922, lxxv, 931.

Arthroplasty of the elbow. W. C. CANNON. *Ann Surg* 922, lxxvi, 65.

A prosthesis for the thumb. S. ORTELL. *Acta chirurg Scand* 922, 1.

Wounds of the knee. H. WILSON. *Praxis medl Par* 922, xxx, 90.

A new approach to the semilunar cartilage. P. W. ROBERTS. *J Am M Ass* 922, lxxvi, 1608.

Amputation of the foot by Volkmann's method. P. Y. CHEN. *Verhandl d Russ Chir Pirogoff Ges*, Petrograd, 9.

A fat transplant for painful stump. H. R. OWEN. *Ann Surg* 922, lxxvi, 670.

SURGERY OF THE SPINAL COLUMN AND CORD

Spinal flexibility. L. H. BRADFORD. *Boston M J* 922, cxxviii, 745.

A case of backward luxation of the seventh cervical vertebra with isolated compression of nerve roots. J. CARR. *Arch franco-belges de chir* 922, lxxv, 945.

Lateral subluxation of the third cervical vertebra on the fourth. GELBERT. *Arch franco-belges de chir* 922, lxxv, 939.

Traumatic spondylitis. T. H. OVERHILL. *Proc Roy Soc Med Lond* 922, xvi, Sect Orthop.

School children and spinal curves. E. H. BRADFORD. *Boston M J* 922, cxxviii, 76.

The roentgen ray in the diagnosis of scoliosis. I. H. LARSEN. *Am J Roentgenol* 922, ix, 73.

The principle of active correction in the treatment of scoliosis. SCHROEDER. *Jahrbuchent d deutsch Naturl Aerzte*, Leipzig, 922.

The treatment of scoliosis. W. J. BRADY. *Arch Radiol & Electrotherapy* 1922, xxviii, 87.

The treatment of scoliosis and spondylitis with the Overholzer method. BERNHARD and PASCAL. *Jahrbuchent d deutsch Naturl Aerzte*, Leipzig, 922.

The operative treatment of severe scoliosis. R. WINTER. *Verhandl d Russ Chir Pirogoff Ges*, Petrograd, 9.

Observations on the correct and operative treatment of structural scoliosis. A. WINTER. *Arch Surg* 922, lxxvi, 678.

The operative treatment of scoliosis. S. KERNBERG. *Arch Surg* 1922, 65.

The interpretation of roentgenograms of Pott disease. PASCAL. *Bol y trab Soc de cirug de Buenos Aires* 1922, vi, 269.

Operation as part of the conservative treatment of Pott disease. W. I. C. WINTER. *Practitioner* 922, cxxv, 34.

One hundred and eighteen cases of tuberculous of the spine treated by the Albee operation. P. G. KOURI. *Verhandl d Russ Chir Pirogoff Ges*, Petrograd, 9.

The value of the Albee operation in tuberculous spondylitis. H. GUTER. *Deutsche med Wochenschr* 1922, lxxvi, 664.

The Hilde operation for immobilization of the spine. S. WINTER. *Woch Med f Levendek* 922, lxxviii, 477.

Compression fractures of the spine: case report. H. H. HILDE. *Westcky M J* 922, xx, 776.

A case of fracture fracture of the cervical spine. J. V. ROBERT. *Arch franco-belges de chir* 922, lxxv, 943.

The causative pathology and treatment of spinal bone ossicles and its sequelae. M. HILDEBRANDT. *Wochenschr med Wochenschr* 922, lxxv, 19.

Radiological contribution to diagnosis of spinal compression in cases having an unrecognized primary focus. T. SCHULZ. *N York M J & Med Rec* 922, cxxv, 964.

An analysis of fourteen conservative cases of spinal cord tumors. C. H. F. LITZ and W. G. WINTER. *Arch Neurol & Psychiat* 922, viii, 452.

(177)

The mechanical effect of tumors of the spinal cord: their influence on the symptomatology and diagnosis C A ELIASSEN and B STROEKER Arch Neurol & Psychiat. 922, viii, 50 [199]

Spinal cord disease, report of cases J J MORRIS Kentucky M J 9 2, ix, 693
Puncture of prevertebral abscess F SCHMID Munchen med Wchnschr 9 lxxx, 779

SURGERY OF THE NERVOUS SYSTEM

A case of malignant ganglioglioma J BEEKEstr path Anat. allg Path 9 2, lxx, 203
Rapidly evolving cervical glioma simulating acute myelitis A LINARIS Policlin Rome 9 xiv part 388

The employment of electrical methods in the diagnosis and prognosis of paralytic due to lesions of peripheral nerves G BORDACCHIO Arch Radiol & Electrotherapy 922, vii 6 [199]

Compression of the median nerv. in fractures of the wrist A N. VARD An fac de med Univ de Mont video 9 395
Rupture of peripheral nerves J S B STROEFORD Brit J Surg 9 2, 6 [191]
The physiological effect of extirpation of the peripheral sympathetic nerve plexus peripheral sympathetic tons J BARTENHO and O STRUB Klin Wchnschr 92 14

MISCELLANEOUS

Clinical Entities—General Physiological Conditions

A case of calcareous deposits in the skin W POWELLOR Modron M J 9 28
Gangrene gangrene as complication of war wounds J VACCARIA and A L NIVON Prog de la chim Madrid 92 xxv 8

Three cases of gangrene of the foot J A MITCHELL Modron M J 92 xv 9 6

A résumé of our knowledge of the functions and interrelations of the endocrine glands I A F. GALT and T J R. Am J M Sc 922 cliv 646

The relation of the endocrine glands to the genital organs C D VINT Gynecologist 9 2

Radiation in the treatment of leukaemia M B BOY Van Clin Med 92 53

Radiation in the treatment of myelogenous leukaemia A HERNIMAN and L J MERVILLE New Orleans M & S J 92 lxxv 247

The study of echinococcoses in the Argentine Republic R W. SCHWICKER Semina med 92 xix 73

The prophylaxis of hydatidosis M V CARROLL and A Z. SCHWICKER Semina med 92 xix 758

The unity or duality of the Texas echinococcus S F. PARRISH Semina med 9 2, xix 753

The general pathologic anatomy of the echinococcus J LEAMANT Semina med 92 xix 758

Hydatid cysts of the uterus R G CARROLL Semina med 9 2, xix 4

Secondary hydatidosis: experimental echinococcosis C L GUANCA Semina med 92 xix 74

Operative methods in hydatidosis O CORNELIO Semina med 922 xix 753

Hydatid cysts operated upon during the years 9 9-92 I. SCHWICKER Semina med 922, xix, 3

Gest cyst J F FOSTAD J Lancet 922 vii 584

The inheritability of spontaneous cancer in mice and its application to cancer in man M. STREIT J Radiol 922 ix 453

The fight against cancer A D CA ALCA TI Arch brasil de med 9 2, xix, 73

Superficial malignancy L H. SCHWICKER Med Herald, 9 2, xix 33

Epidemiology L B. GREEN Med Herald, 9 2, xix, 35

The recognition of regional cancerous recurrences in the skin FRANK Jahrbuch der d. deutsch. Naturf. Verein Leipzig 9

Delay in the treatment of cancer C E FARR Am J M Sc 922, cliv 71

Regarding the treatment of cancer in Europe S W S. AND HOSKINSON Recorder 922, xix, 496

How far can the cancer death rate be decreased by educating the profession and the public F J T. LEON Med Herald, 9 2, xix, 320

Blood

A rapid method of blood analysis R. WYNN N York M J & Med Rec 922, cliv, 515

The chemical interpretation of the findings in blood chemistry Z L. BOURN M J Surgeon, 9 2, ix, 527

Blood destruction during exercise: blood changes occurring in the course of a single day of exercise G O. BROWN J Exper M 922, xix, 43

The microchemical study of the blood and its theoretical and practical interpretation R D. SIMMONS Bull Porto Rico M Am 922, xix, 79

The significance of the blood picture in acute inflammatory surgical diseases E. SCHWICKER Deutsche Zeitschr f Chir 922, cliv, 38

The number of red cells in normal blood and their variations in various physiological conditions E J. RIT. Acta med Scand, 922, ix, 42, 35

The influence of the blood pressure upon the number of erythrocytes L. LARSEN Prems med, Par 922, xix, 974

A chemical lecture on diseases of the blood H Z. GERTT Van Clin Med 922, ix, 5

Intra vitreous bone marrow puncture in pernicious anemia E H. SALZBERG and L M. MORRIS California State J M 922, ix, 404

The effect of the administration of hypertonic salt solution on the blood volume and certain related blood constituents A L. BARACK, W. MASOV and B P. JONES Arch Int Med 922, xix, 668

The standardization of hemoglobinometers and its importance for index calculation H C. GRAM Acta med Scand 922, lvi, 27

Studies on blood lipoids: the relation of cholesterol and protein deficiency to basal metabolism A A. EATERS and H. LAYNE Arch Int Med 922, xix, 563

A simple method to determine the coagulation time of the blood H J. COCKCUTT J Lab & Clin Med 922, viii, 1

A study of the effect of hypophyseal extracts upon the coagulation of the blood R. FINLEY Prems med Par 922, xix, 997

- PETRISSON REACTIO. P. N. P. VON. Med Press, p. 2, col. 450.
- General aspects of the early diagnosis of petriosis. T. L. SELIGER. Ann Clin Med 1932, 4, 57.
- Neurological aspects of the early diagnosis of petriosis. W. W. HOLTMAN. Ann Clin Med 1932, 4, 59.
- Downs' grouping of human blood with respect to leucagglutins apply also to malarial agglutins. S. HENKES. Acta med Scand 1932, 102, 4.
- Blood grouping. R. A. KILGORE. Trans Med & Hosp Rev 1932, 102, 4.
- Observations on effect of sodium citrate on the blood. R. R. MILLER, W. S. HARTMAN, and O. U. CASEY. J Am Med Ass 19 2, 1932, 1678.

Blood and Lymph Vessels

- The formation of varices. G. LOTTERBACH. Zentralbl f Chir 1932, 120, 778.
- Arterial and arteriovenous aneurysms. Dr. GASTALDO. Riforosa med 19 2, 1932, 109.
- Arteriovenous aneurysms of the extremities. A. BOOBY and A. ZENO. Rev med d Romania, 1932, 20, 315.
- The etiology, pathologic anatomy, physiopathology and surgical treatment of true aneurysms. L. GASTALDO. Ann ital di chir 1932, 1, 921. (1932)
- Embolism of the brachial artery complicating acute appendicitis. Case report. P. W. ANDERSON. Am J Surg 1932, 103, 270.
- A case of aortic insufficiency due to trauma. A. A. J. MAYER and A. M. CORNELL. Scand med 1932, 103, 903.
- Changes in the tone of the muscle of the heart and vessels. F. PAI. Arch de med chir y internal 1932, 3, 308.
- Acute obstruction of the superior vena cava. D. WITTEN. Ann Surg 1932, 1, 103, 666.
- Obstruction of the femoral artery. C. P. MILLER. Ann Surg 1932, 1, 103, 65.
- Thrombotic rupture of the femoral artery with hematomas. W. C. F. WITTE and H. E. ZIEGLER. Wiscron Med J 1932, 1, 103, 5.
- Thrombotic arteriovenous aneurysms of the femoral vessels. A. N. SACCO. Rev Assoc med argent 1932, 103, 455.
- The development and progress of vascular surgery. H. F. O. HANSEN. Englis d Chir Orthop 1932, 1, 57.
- A new method for the treatment of thrombo angitis obliterans. S. SCHMIDT. J Am Med Ass 1932, 103, 1032. (1932)

Surgical Diagnosis, Pathology and Therapeutics

- Endocrinology as a key to the solution of major medical problems. C. E. M. SAYORS. Am J Med Sc 1932, 103, 103.
- Mental symptoms in physical disease. M. CHATO. Brit Med J 1932, 1, 44.
- The significance of routine examination of the excretory W. L. REEDER. Ann Clin Med 1932, 4, 100.
- Extirpation of the adrenal in epilepsy. O. M. CASARI. Deutsche Zeitsch f Chir 1932, 103, 103.
- The technique of the basal metabolic rate determination in psychoneurotic patients. B. S. LAYNE. J Lab & Clin Med 1932, 103, 103.
- Some recent advances in chemistry as aids to the clinician. H. C. BRADLEY. Illinois Med J 1932, 103, 103.
- The Wassermann reaction. A. H. BARON. Ann Clin Med 1932, 4, 103.

- The Wassermann reaction in non-syphilitic patients. C. J. BORDMAN. Ohio State M. J. 1932, 103, 103.
- The interpretation of the Wassermann reaction. R. W. DICK. Arch Int Med 1932, 103, 103.
- Pain its causation and relief. H. H. MOLLER. Med Press, 1932, col. 450.
- Beck's and referred pain. E. F. CYR. Arch Radiol & Electrophys 1932, 103, 103.
- Beck's and referred pain. J. GORDON. Arch Radiol & Electrophys 1932, 103, 103.
- Electrotherapy in surgical tuberculosis. R. L. HURN. Canadian M. Ass J 1932, 103, 103.
- Merits of intraperitoneal injections in infants. T. D. McLEOD. Canadian M. Ass J 1932, 103, 103.

Röntgenology and Radiation Therapy

- The present status of radiology. H. ROBERTSON. Lancet 1932, 103, 103.
- Recent developments in radiotherapy. R. F. BALLANCE. J. Lancet, 1932, 103, 103.
- The roentgen ray laboratory of the University Hospital. Philadelphia. E. P. FRIEDMAN and W. R. JAFFER. Am J Roentgenol 1932, 103, 103.
- A new safety device. H. W. VAN ALLEN. Am J Roentgenol 1932, 103, 103.
- The Van Z. stenograph type of stereoscope. S. W. DOWLING and E. F. WHEELER. Am J Roentgenol 1932, 103, 103.
- The practical design of X-rays. A. BARNES. J. Radiol 1932, 103, 103.
- Dosage tables for roentgen therapy. G. HOLLANDER. Leipzig. Deutsche, 1932, 103, 103.
- Fundamental principles of radiation therapy with clinical results possible. A. I. TRUX. Nebraska State M. J. 1932, 103, 103.
- Measure and dosage of the waves in deep radiotherapy. REAGAN. Brunsell med 1932, 103, 103.
- Treatment after irradiation with the roentgen ray. J. A. NARA. J. Am Med Ass 1932, 103, 103.
- Three saving devices for the roentgen ray treatment of rhabdomyosarcoma and lymph of the scalp. O. M. MACKIN and O. C. ANDERSON. Am J Roentgenol 1932, 103, 103.
- The roentgen treatment of carcinoma of the skin. G. MINCHES. Schwann med Wochenschr 1932, 103, 103.
- The treatment of skin cancer by X-rays radium and electrocoagulation. G. L. FRANKLIN. N. York M. J. & Med. Rec 1932, 103, 103.
- Röntgen epidermatitis cured by diathermy. H. BOECKER. Presse med Par 1932, 103, 103.
- Tuberculosis and sarcoma (neutrogenic sarcoma). E. MARCH. Zentralbl f Chir 1932, 103, 103.
- Report of three unusual cases. T. J. GORDON and A. C. CHANDLER. and E. A. MERRITT. Am J Roentgenol 1932, 103, 103.
- The alkali reserve in roentgen ray sickness. R. GORDON. Arch Int Med 1932, 103, 103.
- The above of the X-ray in damage to the skin. F. R. COMPTON. J. Internat J Surg 1932, 103, 103.

Industrial Surgery

- The function of medicine and surgery in industry. E. F. KIRBY. Internat J Surg 1932, 103, 103.
- Industrial dermatitis at the Massachusetts General Hospital. C. G. LACE. Arch Dermat & Syph 1932, 103, 103.
- The acute painful back among industrial employees alleging compensable injury. R. R. COV. J. Am Med Ass 1932, 103, 103.

Accidents (the industries) J G SEIDER LI KASAWKY
N J 92, 22, 733

Battery burns report of three cases H S GRADY
J Am M Ass 92, 1022, 89

The treatment of industrial injuries G BOSCH ARA
Semin med 9, 22, 2

Some phases of industrial surgery J B CARNEY
Internat J Surg 9, 22, 4

Traumatic surgery and compensation A W JOE
J Lancet 9, 2, 22, 529

Hospitals; Medical Education and History

The present economic cost of hospital service E M
STYER Illinois M J 92, 22, 35

Some changes in medical teaching and surgery C A
PORTER Boston M & S J 9, 22, 55

The work of Pasteur and surgery P DELBET Presse
med Pa 92, 22, 24

Legal Medicine

The doctor and the law I McCLURE J Lancet, 9
22, 56

Malpractice in the treatment of fracture Warner vs
Pence (N D) 88 N W p 67 [184]

Payment of surgeon libeled because of alleged mal
practice Haskell vs Hanson (Main) 88 N W p 607
[184]

Suit for damage for alleged failure to remove placenta
Kraeger vs Rosenbaum (Miss) 88 N W p 324 [184]

Suit for damages for the alleged tearing of gauze in an
operation O'Connell Pare vs Carter (Wis) 88 N W
p 68 [185]

GYNECOLOGY

Uterus

The removal of the uterus, physiological, pharmacody
namic and clinical deductions P BALARD Rev franc
de gynec et d'obst, 92, 22, 369

A study of the uterine neoplasms Vital Aza Prog de
la clin Madrid, 92, 22, 27

The use of sutures as tractors in the vaginal operation
for prolapse T S COLLIER Am J Obst & Gynec
9, 22, 144 [184]

Retention of the round ligaments in retroversion of
the uterus A J NYLAND Med J Australia, 9, 2, 22, 55 [184]

The operative treatment of retroversion of the uterus
with laparotomy-ventrosotomy H KOSTER Tschir J
Geburtsh u Gynaek 92, 22, 64

The present status of the fibroid tumor question H E
FRANK Med Herald, 9, 2, 22, 33

Soprapubic stereotaxis of the uterus R RIVIER Rev
med d Rosario, 9, 2, 22, 254

Diffuse adenomyosis of the uterus J C ARUNAD
Bol soc de obst y gynec de Buenos Aires, 92, 2, 22, 55

Carcinoma of the uterus I B HILSON J Med Soc
N Jersey 9, 22, 37

Cancer of the uterus F W MARLOW Canadian Pract
9, 2, 22, 49

Observations on cancer of the uterus L D DE RHODE
Ibid M J 92, 22, 33

Cancer of the uterus R FRIMLEY Med Herald, 9
2, 22, 38

The treatment of terine cancer R DEACA Texas
State M J 9, 22, 266

Pre-cancerous conditions of the cervix uteri R R
H COO Am J Obst & Gynec 9, 2, 22, 35 [184]

A clinical study of cancer of the cervix uteri: summary
of the results obtained by various methods of treatment.
J W ROW Canadian M Ass J 9, 2, 22, 17

The treatment of uterine cervical cancer J L F THE
Rev argent de obst y gynec, 92, 22, 304

The effect of radium in the treatment of cancer of the
uterine cervix G ROYER and R LEMOY Rev de
hyg Pa 9, 2, 22, 499

The action of radium emanation on the uterus and ovaries
of guinea pigs A KOSTER and M MOLLER Gynec
et obst, 9, 22, 244

The identification and direction of the ureters in
Wertheim operations T J PIERCE Rev argent de
obst y gynec 9, 22, 261

Adnexal and Peri Uterin Conditions

Psoas-pump opening into the urinary bladder operation
case ERINACU Spalhof, 92, 22, 294

The accessory blood canals of the fallopian tubes F
JAYLE and I HALLMARK Rev franc de gynec et d'obst
92, 22, 489

Pneumoperitoneum with the Roentgen ray in the diag
nosis of ovarian tumors A CRISTO Semina med
92, 22, 918

The histology of ovarian hematomata (hemorrhagic
cysts) of endometrial (mucous) type J A SAMMOY
Am J Obst & Gynec 9, 22, 45 [184]

Dermoid cysts of both ovaries with torsion of the left
pedicle S E BERNARD Bol Soc de obst y gynec de
Buenos Aires, 9, 2, 22, 35

Solid carcinoma of the ovary M R HORN Ann Surg,
9, 2, 22, 268 [185]

External Genitalia

The presence of three intact and superimposed hymens
in the same os S E BERNARD Bol Soc de obst
y gynec de Buenos Aires, 9, 2, 22, 3

The formation of an artificial vagina ROSENTHAL
Zentralbl Gynaek 9, 22, 70

The treatment of vesicovaginal fistula A J BRIDGLEY
Rev argent de obst y gynec 92, 22, 420

Miscellaneous

Urinary incontinence in the female E L LOGAN, J
J Am M Ass, 92, 22, 753

The hygienic pierces in women A LA ARJET and
P ROCHER Gynec et obst 19, 22, 25

Does an anatomical relation exist between the female
genital organs and the central nervous system SERRA
WOOD-DEN Am J Clin Med, 9, 2, 22, 8

The endocrines in gynecology J J ROOMA Kentucky
M J 9, 22, 267

A note on variations of blood pressure during men
struation S E AWOL Lancet, 92, 22, 856

A note on the anatomic coefficient in menstruation
M BOY Lancet, 19, 2, 22, 957

Observations on temperature and other changes in
women during the menstrual cycle W C CRILEY, E M
OBERVINCEN, and M ROE-JOHNSTON Lancet, 19, 2,
22, 954

The treatment of puerperal sepsis by the use of saccharochromic ultravioletly with report of animal experimentation in the chemical disinfection of the blood. E. H. PIERCE. *Am J Obst & Gynec* 9, iv, 53. [1920]

The surgical treatment of puerperal gas bacillus infection of the uterus physometra. H. BRUYER. *Arch f Gynaek* 922, cxvii. [1921]

Newborn

Relationship of eclampsia of nursing to acute otitis media. O. KUTVART. *Rev de laryngol* 9, xiii, 803.
A thoracic talon deli erod. (full term). W. G. ROBERTS. *Am Med* 9, xlviii, 65.

Patient foramen ovale. C. JONES. *N. J. Australe* 1922, x, 30.

Intracranial hemorrhage in the newborn with observations on fracture of the skull of the infant. A. C. BALLANCE and C. A. BALL. *Ver. Lancet* 9, x, cxvii, 99.

Hemorrhagic diathesis of the newborn with direct transmission into the longitudinal sinus through the anterior fontanel. J. A. SCHWARTZ. *J. Am M. Ass.* 92, lxxxv, 608.

A study of the shadows in the thorax of the newly born. L. R. DEBUS and E. C. SAKURAI. *Am J Dis Child* 9, xxiv, 397.

Miscellaneous

The work of Pfeiffer and obstetrics. WALLICH. *Pressemid. Par* 9, xxv, 57.

Problems of the present obstetrical situation. W. W. BRA. *Ohio Stat. M. J.* 922, xviii, 746.

A survey of one year's work in the Department of Obstetrics, Hahnemann Hospital, Philadelphia. J. E. JAMES. *J. Hahnemann Month.* 9, lvi, 650.

Obstetrics and gynecology in relation to industry and its accidents. J. B. GONZALEZ. *Semin. med.* 92, xvii, 304.

The obstetrical future of women subjected to large incisions of the neck of the cervix during labor. P. BALLARD. *Rev. franc. de gynéc. et d'obst.* 92, xvi, 55.

Maternal mortality. C. A. WINTER. *J. Med. Am. Georgia*, 9, x, 41.

Maternal mortality of child bearing: its causes and how to deal with them. T. W. LLOYD. *Lancet* 9, cxvii, 998.

GENITO-URINARY SURGERY

Adrenal, Kidney and Ureter

Adrenal insufficiency. W. AL. ARIZ. *Semin. med.* 922, cxv, 569.

Traumatic subcapsular rupture of the kidney. O. KELLER. *Arch. d. med. d. rene et d. organes (Paris)* 1922, 1, 57. [1922]

The kidney and ureter in obscure pain of the right abdomen. L. R. KAUFMAN. *I. Intern. J. Surg.* 9, xxv, 386.

Kidney metastases. C. F. BAR. *IT. Chicago M. Rec.* 9, xlv, 401.

What the clinician should demand of an examination and analysis to determine the function and the anatomical condition of the kidneys. J. TREMBAY. *Brussels med.* 9, ix, 53.

A test of the capacity of the kidney to produce urine of high specific gravity. T. ANDERSON and M. C. SHERMAN. *Arch. Int. Med.* 9, xvi, 559.

The importance of fluid intake in the treatment of kidney insufficiency. O. H. P. PIERCE. *Practitioner M. J.* 9, xvi, 83.

Agenesis with congenital fused kidney. A. HETTMANN. *Ztschr. f. urol. Chir.* 9, ix, 93.

The surgery of horseshoe kidney. H. ROOSER. *Ztschr. f. urol. Chir.* 9, 427. [1922]

The diagnosis, interpretation, and biological treatment of renal disease. N. P. NORMAN. *N. York M. J. & Med. Rec.* 9, cx, 48.

The management of the carbuncle case. M. A. MONTGOMERY. *J. Michigan Stat. M. Soc.* 9, xvi, 449.

Orthostatic or interstitial albuminuria and the incidence of suppurative kidneys in young adults. A. H. PIERCE. *Northwest Med.* 9, x, 303.

Renovascularization in nephropathies. W. C. BARKER. *Hahnemann Month.* 922, lvi, 677.

Pyelography. L. FRIEDLÄNDER. *Deutsche Ztschr. f. Chir.* 922, cxvii, 399.

Tubercular kidney diagnosed as tuberculous. H. S. JACK. *N. York M. J. & Med. Rec.* 9, cxvii, 530.

The anaplastic type of tertiary renal syphilis. F. W. NOLAN. *Policlin. Boston* 9, xxi, xxxi, 6.

The effect of anti-syphilitic treatment on the kidney. W. F. LOEBE and W. J. BLACKBURN. *Wisconsin M. J.* 9, xxi, 323.

A modern classification of the types of nephritis. WOLF. *Pressemid. Par.* 9, xxv, 634.

Acute renal nephritis: its interpretation and its treatment. P. MARILLAS. *Prog. de la clin. Med.* 9, x, xvi, 36.

Some cases of pyelonephritis and their treatment by ureteral catheter. R. H. KITCHEN. *J. urol. med. et chir.* 9, xiv, 87.

Pyelitis in children. J. F. DUFFY. *Kentucky M. J.* 92, xi, 757.

The treatment of pyelitis with urotropin and with renal given by intracapsular injection. V. IURA. *Policlin. Rome*, 9, cxv, xxxi, 385.

Cystic kidney. E. WOODMAN. *Ztschr. f. urol. Chir.* 9, x, 385.

Solitary cyst of the kidney. J. DOUGLAS. *Am. Surg.* 922, lxxvi, 646.

The latent distensions of the renal pelvis and their clinical significance. O. ORTIG. *Ztschr. f. urol. Chir.* 92, x, 30.

Hydro-nephrosis hydro-ureter case report. O. GRAY. *Kentucky M. J.* 92, xi, 778.

The histologic lesions of experimental aseptic hydro-nephrosis. R. DEBERNE. *Laborat. Arch. d. med. de rene et d. organes génitourinaires*, 9, 1, 68. [1922]

Renal colic in cases of renal and ureteral stones. H. H. MORTON. *J. S. Read. J. H. BURKE, and W. B. T. RICE.* *J. Am. M. Ass.* 9, x, lxxx, 65.

An unusual case of renal calculus report of case. A. DREYER. *N. York M. J. & Med. Rec.* 92, cxvii, 530.

The diagnosis of small concretions in the renal pelvis and ureter. V. BARRY. *Ztschr. f. urol. Chir.* 922, x, 538. [1921]

Hypernephroma of the kidney removal with penicillin. J. H. MASON. A. R. STEVENS. *N. York M. J. & Med. Rec.* 9, cxvii, 307.

A case of sarcoma of the kidney in a young boy. P. M. H. OREN. *Lancet*, 92, cxvii, 1007.

The diagnosis of surgical kidney. W. H. BURKE. *Northwest Med.* 1922, xxi, 407.

Extrarenal and ureteral pathology causing renal symptoms in the presence of negative urine R F HART
 Northeast Med 92 xii, 599
 Some recent advances in urological surgery H O
 BOGERT N York M J & Med Rec 92 cxvi, 489

The choice of anesthetic in major urological surgery
 W H THOMA N York M J & Med Rec 92 cxvi,
 5
 Some problems in the surgery of the urinary tract W
 C QUERRY Chicago M Rec 92 x, xli 408

SURGERY OF THE EYE AND EAR

Eye

The place of ophthalmology in the undergraduate medical curriculum W G M BYRNE Arch Ophth 92
 h, 366
 Graduate instruction in ophthalmology W H WILSON
 Illinois M J 92 x, xlii, 366
 Methods of refinement in ophthalmologic diagnosis R
 V HAYES Illinois M J 92 xlii, 375
 Adenoids and eye strain in school children—why many
 see school F R WOOD J Iowa State M Soc 921,
 22 451
 Monocular and binocular vision T S BARRIE Brit
 M J 922 ii, 360
 Eye hazard and eyeght in industry D J LYLE
 Cincinnati M J 922 ii, 387
 First care of eye accidents by the general practitioner
 W H CRAW Colorado Med 922, xii, 276
 The nursing of eye cases L KRYGIAN Trained Nurse
 & Hosp Review 922, ix, 403
 The Wheeler plastic operation on the eyelid H H M
 LYLE Ann Surg, 922 cxvii, 656
 Trachoma S E MITCHELL J Oklahoma Stat M
 Ass 922, xv, 324
 Neoplasms of an accessory lacrimal gland A NATALE
 Rev Assoc med argent 92 cxvii, 545
 Corneal lesion of the eye in dacryocystitis C H BAKER
 J Michigan State M Soc 922, xvi, 467
 Anomalous forms of premaxillary conjunctivitis R
 VALERO Rev med de Sevilla 922, xii
 Spasm of the ocular muscles and diplopia M MIA
 922 Arch de med chirug y special 922 93
 Monocular and binocular accommodation A DEANE
 Am J Ophth, 922, 865
 A case of bilateral exophthalmos caused by lymphatic
 edema of the orbital tissues A F MACCALLA Lancet,
 922, cccc, 666
 A case of neuritic optic atrophy in tabetic rib dis-
 section of the also of the differential pupilloscope in such
 case A S TIERNEY Arch Ophth 922 ii, 58
 The relation of orbital affections to nasal conditions
 S A BRIDGES Pennsylvania M J 922 cxvi, 74 [199]
 Some observations on orbital growth reports of three
 cases W T SEIDERMAN Pennsylvania M J 922
 cxvi, 70 [199]
 Defects and diseases of the eyelid H S GRADLE and
 H CARVER Ophth Lit 922, xvi, 435
 Ocular astigmatism S R GIFFORD Arch Ophth,
 922, h, 540 [200]
 Ocular astigmatism with extension involving the brain
 and spinal cord H NAA Brit J Ophth 922 vi
 49, 337 [200]
 Ectropion and ptosis D J LYLE Am J Ophth
 922 849
 The results of slow paranasal cystitis G H BURMAN
 Am J Ophth 922, 878
 The therapeutic use of vocal payment in sympathetic
 ophthalmia A C ROOSE and A HARR Arch Ophth,
 922, h, 300 [200]
 Pterygia ophthalmia W F STREET Practitioner
 1922, cix, 395

Focal infection in the tonsil causing tuberculous
 ophthalmia C M JACK J Am M Ass 922, hccc,
 576 [200]
 Injury to the cornea and conjunctiva due to fish bile
 F H VANDERKAM and J B FRIEDENWALD Am J Ophth,
 922 837 [201]
 A simple operation for pterygium L W CROOKER
 Arch Ophth 922 ii, 577
 A hole in the sclera F D LA VEGA Rev Assoc
 med argent 922, cxvii, 549
 Three cases of posterior cortical cataract due to trauma
 VAN LYN Bruxelles med 922, ii, 6
 A new radium applicator for the treatment of cataracts
 B ALLEN Am J Roentgenol 922, ix, 755
 Some dedicated lenses lesson on coaching J L
 GIBSON Med J Australia, 922, ii, 65
 A new method of removing the lens by its capsule G
 L JOHNSON Arch Ophth 922 ii, 548 [201]
 The importance of heterophoria tests in routine re-
 fraction H H BRUCE Am J Ophth 922, 830
 Penicillin: reliable factors influencing the breadth of
 fields C E FIDELL and G R VO Am J Ophth 922
 886
 Color vision B CHANCE Ophth Lit 922 cxvii, 408
 Visual tracks and centers C P SMALL Ophth Lit
 1922, cxvii, 393
 The retina M FERNOLDS Ophth Lit 922 cxvii, 377
 Toxic amblyopia D F HARRINGTON Ophth Lit
 922 cxvii, 36
 Three cases of acute choroiditis of ethmoidal origin
 BRA DOW Bruxelles med 922 ii, 35
 Observations in case of hypema retinalis H H Mc
 GURK Am J Ophth 922 862
 Bilateral detachment of the retina in the nephritis of
 pregnancy reattachment of the retina E M BLAKE
 Arch Ophth 922 ii, 556 [201]
 Glaucoma retine E H CAR Texas Stat J M 922,
 xviii, 276
 The optic nerve W T DAVIS Ophth Lit 922,
 xviii, 356
 Ophthalmology and the lesser alcohol J M DOW J
 Iowa Stat M Soc 922 xii, 446
 A cabinet for galvanic electricity M E SMITH
 Am J Ophth 922 865
 Velocimetry E J BROWN Am J Ophth 922,
 867
 Elixophony C D J KES Am J Ophth 922 v 807

Ear

Further studies in the functional examination of the
 acuity of hearing and its relation to the perception of
 sounds of different pitches produced by the new electric
 audiometer J G REKA Laryngoscope, 922, cxix, 830
 The study of the vocal ranges in lesions of the middle
 ear L W DEAN and C C BURCH Ann Otol Rhinol &
 Laryngol 922 cxix, 67
 A safe artificial ear-drum J DUNN CHANT Lancet,
 922, cccc, 66
 Aurial lesions as cause of severe systemic infections T
 J HARRIS Laryngoscope, 922, cxix, 830

A review of hereditary syphilis of the ear M L BRANTZMAN N York M J & Med Rec 9 2, cxvi, 516
 Syphilis of the internal ear W T SALMON J Oklahoma Stat M Ass 92 xv 252
 Acute mastoiditis complicated by acute concurrent disease C F ADAMS Laryngoscope 9 xxiii, 246
 Acute mastoiditis associated with acute septicemia C M SATTEN N York M J & Med Rec 92 cxvi, 284

A new method of anastomosing stereoscopic observations of both mastoids P C HOGGERS Am J Roentgenol 922, 17, 753 [201]
 The indications for the radical mastoid operation M J GOTTLEIN Am J Surg 922, xxxvi 260 [201]
 The curative value of blood transfusions in postopera-tive mastoid conditions H HAYS Am J Surg 922, xxxvi, 295.

SURGERY OF THE NOSE, THROAT AND MOUTH

Nose

Observations on hay fever I C WALKER Ann Otol Rhinol & Laryngol 9 xxii, 660
 Lower half headaches J J SERRA South M J 1922, xv, 946
 Headaches of nasal origin E A ARNHEIMER J Oklahoma State M Ass 92 xv 50
 Some phases of septal surgery J A DARRITT Med Times, 1921, L, 79
 Metal trays and cobble' splint dressings I F S ESSEX Moenchsen med Wochenschr 9 lxxv 54
 The present status of rhinoplastic interpretation as an adjunct in the diagnosis of cultural lesions of the accessory sinuses K H SKILLMAN Ann Otol Rhinol & Laryngol 922, xxxi, 855
 Sphenoid-ethmoid anastomosis J J SERRA Ann Otol Rhinol & Laryngol 922, xxxi, 853
 Total blindness of both eyes in a boy 7 years of age cured by an ethmoid operation and opening of the sphenoid sinus D N HUNT Laryngoscope 922, 874
 The acute antrum T B JOHNSON Lancet 922 cxix 1060
 Climatic influence in infections of the upper respiratory tract C A McWILLIAMS South M J 922, xv 924

Throat

The bacteria of the tonsils and adenoids A WALL Brit M J 92 ii 925
 The removal of infected tonsils early in life T W S ALLISON J Oklahoma Sta M Ass 92 xv 51
 Some essential details for the complete removal of the tonsils by the reverse guillotine method M VALERO Practitioner 922 cxv, 120
 Tonsillectomy death E F VICKER Wisconsin M J 92, xxi, 234
 The suppurative end results as all performed tonsillectomies C W RICHARDSON Ann Otol Rhinol & Laryngol 922, xxxi, 878
 A rare case of retropharyngeal tumor J SARGENT Gydeghast, 9 423
 Acute peritonsillitis of the larynx with report of case F A WILK J Iowa Stat M Soc 922, 430
 Bilateral abscess of the larynx caused by malarial infection S SALMON and M H CORLIS J Am M Ass 922, lxxxv, 560
 A laryngeal plastic for bilateral posticus paralysis STEINLEBER Jahrbuch der deutsch Naturf Aczt Leipzig 9

Notes on peroral endoscopy and laryngeal surgery C JACKSON Laryngoscope, 922, xxxi, 863

Mouth

F edimentals in oral diagnosis A B VASTINE Dental Cosmos 922 lxxv 49
 Oral sepsis as its relationship to disease C K KIRBY and H W BROWN Chicago M Rec 922, 42
 An elementary lecture on food and feeding in relation to the teeth J G WALLACE Med Press, 1922, cxv 408
 The effect of defective diet on teeth the relation of calcium, phosphorus and organic factors to caries like and teaching times defects C J GARDNER J Am M Ass 922, lxxv 167
 Focal infection of dental origin C H MAY Dental Cosmos 922, lxxv 266
 The X ray treatment of apical abscesses L H LINT Dental Cosmos 922, lxxv 24
 Dental facts for physicians I HAZEN Dental Cosmos 922, lxxv 161
 Rootitis obtainable by the co-operation of dentist and physician H C BURNETT J Dental Cosmos 1922, lxxv 67
 Roentgen therapy in dentistry J L GUNSTON Am J Roentgenol 922, 17, 740
 The development and correction of retentive cysts of the maxilla antinominal and prosthetic factors H W MACWILLIA J Am M Ass 922, lxxv 743
 A case of bacterial gingivitis treated with apparatus suction by radium G L FRANKLIN Am J Roentgenol 922, 17, 76
 A combined gag and tongue retractor H F G BYLER Lancet 922, cxix, 90
 A well retaining tongue depressor A J HERRIN Laryngoscope 922, xxxi, 400
 Pterygomaxillary parotitis due to translocation of Strep-tococcus R B COO WENHAM M J 922, 423
 Tuberculosis of the salivary glands ARNOLD Ann nat di chm 922, 17, 8
 A case of salivary calculus G D MALL Indian M Gaz 922, lxxv 48
 Salivary calculus of the floor of the mouth Ca 1122 and M SCHWARTZ J de med de Bordeaux 1922, xxxv 68
 The diagnosis of subacute and chronic inflammatory lesions of the mucous lining of the maxillary sinuses of Highmore W SCHULZBERG N York M J & Med Rec 1922, cxvi 57

APRIL, 1923

International Abstract of Surgery

Supplementary to
Surgery, Gynecology and Obstetrics

EDITORS

FRANKLIN H. MARTIN Chicago
SIR BERKELEY MOYNIHAN K.C.M.G. C.B. Leeds
PAUL LECENE Paris

SUMNER L. KOCH, Abstract Editor

DEPARTMENT EDITORS

DEAN D. LEWIS, General Surgery	ADOLPH HARTUNG, Roentgenology
CHARLES B. REED, Gynecology and Obstetrics	JAMES P. FITZGERALD, Surgery of the Eye
LOUIS E. SCHMIDT, Genito-Urinary Surgery	FRANK J. NOVAK, J., Surgery of the Ear
PHILIP LEWIN, Orthopedic Surgery	Nose and Throat

CONTENTS

I	Authors	ii
II	Index of Abstracts of Current Literature	iii
III	Editor Comment	viii
IV	Abstracts of Current Literature	217-272
V	Bibliography of Current Literature	273-288

Editorial communications should be sent to Franklin H. Martin, Editor, 30 N. Michigan Ave., Chicago.
Editorial and Business Offices: 30 N. Michigan Ave., Chicago, Illinois, U. S. A.
Publishers for Great Britain: Baillière, Tindall & Cox, 8 Henrietta St., Covent Garden, London, W. C.

- A review of hereditary syphilis of the ear M L BARTHELEMY N York M J & Med Rec, p 2, civi, 536
 Syphilis of the internal ear W T SALMON J Oklahoma State M Am 922, xv 378
 Acute mastoiditis complicated by an acute concurrent disease C F ADAMS Laryngoscope, p 2, xciv, 866
 Acute mastoiditis associated with acute asplenia C M SATTIER N York M J & Med Rec, p 2, civi, 574

- A new method of mastoidectomy stereoscopic observation of both mastoids P C HODGES Am J Roentgenol, 1922, x, 753 [Df]
 The indications for the radical mastoid operation M J GOTTLIEB Am J Surg 922, xciv, 500 [Df]
 The curative value of blood transfusion in postoperative mastoid conditions H HAYS Am J Surg, 1922, xciv, 205

SURGERY OF THE NOSE, THROAT AND MOUTH

Nose

- Observations on hay fever T C WALLACE Ann Otol Rhinol & Laryngol, p 2, xcvi, 660
 Lower half headache J J SERRA South M J 1922, xv, 960
 Headache of nasal origin E A WINTERSTEIN J Oklahoma State M Am, p xv 39
 Some phases of septal surgery J A BARRITT Med Times, 922, L 20
 Metal inlays and cobbler splint dressings I F B EASER Wisconsin med Wisconsin 19 lux 54
 The present status of rhinographic interpretation as an adjunct in the diagnosis of catarrhal affections of the accessory sinuses R H SULLIVAN Ann Otol Rhinol & Laryngol 1922, xcvi, 855
 Spheno-rhinoid sinistis J J SERRA Ann Otol Rhinol & Laryngol, p xcvi, 85
 Total blindness of both eyes in lux 7, ears of are cured by an ethmoid operation and opening of the sphenoid sinus D N HIRSH Laryngoscope, 192, xcvi, 874
 The acute sinusitis T B JOHNSON Lancet, p2, cxvii, 660
 Climatic influence in selection of the upper respiratory tract C A McWILLIAMS South M J 922 xv 94

Throat

- The bacteria of the tonsils and adenoids V WALL Brit M J, p, x, 700
 The removal of infected tonsils early in life T W STALLERS J Oklahoma State M Am 922 xv 33
 Some essential details for the complete removal of the tonsils by the reverse guillotine method V VLASTO Practitioner 922, ci 370
 Tonsillotomy death E F MITCHELL Wisconsin M J, p 2, xcvi, 234
 The suppurative and results in all performed (smaller tonsils) C W RICHARDSON Ann Otol Rhinol & Laryngol, p xcvi, 678
 A rare case of retropharyngeal tumor J BAPPAVALA On 660 Lancet, p 412
 Acute peritonsillitis of the larynx, with report of case F A WILL J Iowa State M Soc, p 2, xli 490
 Bilateral abductor paralysis of the larynx caused by malarial whealsy S SALVAGAR and M H COTTLE J Am M Am 922 xcvi, 396
 A laryngeal plexor for bilateral posterior paralysis Struhschlag Jahrbuch der deutsch Natur, Acute Leipzig, p

- Notes on peroral endoscopy and laryngeal surgery C JACKSON Laryngoscope, 922, xcvi 869

Mouth

- Fundamental in oral diagnosis A B VARTY Dental Cosmos, p lux 49
 Oral apices in its relationship to disease C S KIRKENT and H W BLEN Chicago M Rec 922, xcvi 411
 An elementary lecture on food and feeding in relation to the teeth J S WALLACE Med Press 1922, cxv 408
 The effect of defective diets on teeth the relation of calcium, phosphorus, and vitamin factors to caries and attaching tissue defect C J GRAYES J Am M, 922, xcvi 367
 Focal infection of dental origin C H HAYES Dental Cosmos, p 1, 306
 The X-ray treatment of apical abscesses L H LIPP Dental Cosmos, p lux 80
 Dental facts for physicians L HARRIS Dental Cosmos, p lux 16
 Results obtainable by the co-operation of dentist and physician M C BURCHES J Dental Cosmos, p 2, lux 67
 Roentgen therapy in dentistry J L GARRETTSON Am J Roentgenol, p 1, 740
 The development and correction of extensive cysts of the maxilla anatomical and prosthetic factors H W MACWILLIA J Am M, 922, xcvi, 741
 A case of submaxillary glanditis treated with apparent success by radium G F FRANKLIN Am J Roentgenol, p 2, 756
 A combined gag and tongue retractor H F G BOYLE Lancet, p 2, cxv 30
 A self retaining tongue depressor A J HICKES Laryngoscope, p xcvi, 900
 Pharyngeal peritonsillitis due to encrustation of Stevens's duct A B COTTE Seminars, p xcvi, 8
 Tuberculosis of the salivary glands ANTONIO Ann Med, p 2, 78
 A case of salivary calculus G D STALL Is has M Soc, p lux, 48
 Salivary calculi of the floor of the mouth Ca ALL and M ANTONIO J de med de Bordeaux, p xcvi 685
 The diagnosis of subacute and chronic inflammation lesions of the mucous lining of the buccal surface of Highmore W STELLINGSMA N York M J & Med Rec, p2, cxvi 571

CONTENTS—APRIL, 1923

ABSTRACTS OF CURRENT LITERATURE

GENERAL SURGERY

SURGICAL TECHNIQUE

Operative Surgery and Technique

- BURKE, W. C. and McCLECK, W. B. An Aseptic Method of Intestinal Anastomosis: An Experimental Study 7
- HERRING, A. An Improved Method of Supporting the Bladder and Vagina After Vaginal Hysterectomy for Prolapsed Uterus 30
- ROBERTSON, J. The Formation of Vagina in Congenital Vaginal Malformation 33
- ROBERTSON, J. The Formation of an Artificial Vagina 35
- OSWALD, F. The Partially Trans-peritoneal and Partially Extraperitoneal Operation of the Kidney—An Intraperitoneal Operation of the Kidney—An Intraperitoneal Operation of the Kidney 36
- KATZ, R. P. Cataract Extraction with Indol 70

Anastomosis

- MILLER, W. R. and FRANK, E. B. Transcervical Cervical Block Anastomosis in Surgery of the Pelvic Floor and Its Vagina 7

SURGERY OF THE HEAD AND NECK

Head

- LEWIS, J. B. and STONE, E. Homoplastic and Heteroplastic Tumor Grafts in the Brain 8
- FRANKLIN, M. V. Harelip and Cleft Palate 9
- SCHROEDER, C. C. and DALAND, E. M. The Results of Operations for Cancer of the Lip: The Mamma Glands General Hospital from 1900 to 1919 9

Neck

- FRANKLIN, G. E. Radiotherapy in Carcinoma of the Larynx, with Special Reference to Radium Needles Through the Thyroid Membrane 20
- KLOPP, H. and HELLWIG, A. Malignant Struma 230
- ROBERTSON, C. A. Thyroidectomy: A Modified Technique 230

SURGERY OF THE CHEST

Chest Wall and Breast

- WILL, P. Extrapleural Thoracoplasty as the Treatment of Pulmonary Tuberculosis 21
- KELLY, H. Fibro-adenoma of the Breast in the Male 231

Trachea and Lungs

- BALDWIN, G. M. Hydrated Cyst of the Lung 7
- HERRING, E. Fatal Congestive Hemorrhages in the Lung and in the Central Nervous System Due to Momentary Bodily Exertion and Their Relationship to Perthes' Pressure Congestion 30

Heart and Vascular System

- PLATT, A. Cervical Sympathectomy as Means of Stopping the Pain of Angina Pectoris 33

Pharynx and Esophagus

- STERN, O. Multiple Cancer Formation: Carcinoma of the Vallecula Epiglottica and of the Esophagus 36

SURGERY OF THE ABDOMEN

Abdominal Wall and Peritoneum

- MOOREHEAD, A. W. The Anatomy and Identity of Ectocyst and Infantile Hernia 7
- CARLE, J. A. and COLLIER, G. H. Experimental Observations on the Localization of the Pain Sense in the Parietal and Diaphragmatic Peritoneum 24

Gastro-Intestinal Tract

- WILSON, R. T. Peptic Ulcer 24
- LEWIS, M. Peptic Ulcer with Deformities of the Vagus, Evidenced by the X Rays, Changed to the Better by Treatment 24
- HANCOCK, A. W. Cancer of the Stomach 235
- CROMBIE, R. P. Some Observations on the Surgery of Duodenal Membranes, with Call to Report of the Results of Treatment 5
- JEWELL, R. C. Two Cases of Duodenal Obstruction in Infants 26
- KLEINSMITH, P. The Treatment of Carcinoma of the Papilla of Vater 26
- LACE, W. A. WATSON, G. GRAHAM, H. M. W. P. FORBES, H. J. and WATSON, A. J. The Treatment of Non-Malignant Affections of the Colon 237
- ROBERTSON, J. Atypical Operations—Especially Safe Subtotal Extirpation (Excision of the Tip of the Appendix)—in Cases of Severe Adhesions Due to Appendicitis 230
- CARTER, R. F. The Pre-Operative and Postoperative Treatment for Colon Malabsorption 230

COLLINS, J. K. Aspleic Rejection of the Intestine
HOSNEY, C. F. An Aspleic Technique for the Re-
section of the Intestine

MCCOY, J. R. Involvement of the Lymph Nodes in
Carcinoma of the Rectum

QUINLAN, W. S. Congenital Malformations of the
Intestine—Atresia and Imperforate Anus

Liver, Gall-Bladder, Pancreas, and Spleen

GOSNOL, J. K. Congenital Obstruction of the Bile
Ducts and Congenital Biliary Cysticosis of the
Liver

GOODELL, R. Can the Kehr Drainage of the Hepatic
Duct Be Replaced by a More Complete Pro-
cedure? The Ideal Cholecystostomy

LOCHTER, C. H. The Relationship of Surgery to the
Diseases of the Hepatobiliary System

OSBORN, P. A Case of Torsion of the Gall Bladder

FRANK, F. Acute Lumbago in the Biliary
Tract

CONLEY, J. R. Chronic Catarrhal Cholecystitis
with Lipoid Deposits

LEWIS, N. D. C. and RUTTEN, F. A. A Contribution
to the Study of Connective Tissue Changes in
the Gall Bladder

MCCLELLAN, C. W. and JONES, C. M. Studies in
Pancreatic Function

BOWEN, H. A. H. A Pancreatic Cyst in the Left
Hypochondrium Excised

LOWMAN, P. and DRACUTER, H. Encysted
Hematomata of the Spleen

SURGERY OF THE EXTREMITIES

Conditions of the Bones, Joints, Muscles, Tendons, Etc.

ENDERBROOK, G. Chronic Diseases of the Joints
Other Than Mycotic and Neuropathic Con-
ditions

KAPLAN, M. Facts and Theories Explaining the
Spontaneous Onset of Joint Nerve

JACOBY, P. Synovial Cystitis

MILLER, W. Observations on the Course the
End Results and the Lamellar Occurrence of
Osteochondritis Deformans Cereus Juvenilis

STRANDBERG, L. Calcified Legg Perthes Disease of the
Hip, Osteochondritis Deformans Cereus Juvenilis

SCHULZ, A. Lat. Rickets of the Great Trochanter

REIDER, W. Remarks on the Etiology of Schaller
Disease

TELLER, R. Remarks on the Reports of Deutsch-
lander and Vogel on an Unusual Disease of the
Vertebrae—Inflammation of Fracture

Fractures and Dislocations

FRENCH, O. The Treatment of Ununited Fractures of
Bones

FRANK, W. The Operative Treatment of Supra-
condylar Fractures of the Humerus

JACOBSON, W. Advances in the Treatment of the
So-Called T-pedal Fracture of the Radius

3 STEVENS, J. H. Compression Fractures of the
Lower End of the Radius 44

3 DELANNOY, E. Rare Wrist Joints 255

3 CALOT, F. and COLLET, H. Congenital Subluxation
of the Hip—Osteochondritis (or Coxo Plura)
Is Subluxation 35

3 WHITE, R. Incomplete Epiphyseal Fractures at
the Hip 39

WILKINSON, A. D. Intra-articular Operations for Fractures
of the Neck of the Femur 79

PARVIZ, C. I. I. on the Crucial Ligaments
and Arteries of the Tibial Spine 40

3 MOORE, B. H. Subastragular Dislocation of the
Foot 240

33 MUELLER, A. A Case of Breaking-Off of the
Tuber Calcanei 240

3 Surgery of the Bones, Joints, Muscles, Tendons, Etc.

33 HEDGECOCK, M. S. Surgery in Infantile Paralysis 24

33 REED, M. R. The Use of Large Reverdin Grafts in
the Healing of Chronic Osteomyelitis 242

33 CANNON, W. C. Arthropathy of the Elbow 242

33 ROBERTS, P. W. A New Approach to the Semilunar
Cartilages 243

33 MORGAN, H. Wounds of the Knee 243

34 LITVINSKY, The Graft Aspiration in Injuries
Medicines 243

34 SURGERY OF SPINAL COLUMN AND CORD

34 SCHULTZ, F. Fracture of Vertebrae Alveoli 244

34 KRON and VINCE. Cervical Ribs 244

34 OPENHAW, T. H. Traumatic Spasmodic
Spasmodic G. E. Rheumatic Spasmodic—Spas-
modic Deformities 245

34 CARTER, R. B. Bony Bridging in Tuberculosis of
the Spine 246

34 KATZBERG, S. The Operative Treatment of
Scoliosis 246

34 HARRIS, BROOK, M. The Causation, Pathology, and
Treatment of Spinal Cord Lesions and Its
Sequelae 246

36 SURGERY OF THE NERVOUS SYSTEM

36 LANDMARK, O. Techniques of Nerve Suture 246

36 BRIDGES, F. and STOUT, O. The Physiological
Effect of Excitation of the Peri Arterial Sym-
pathetic Nerve Plexus—Peri Arterial Symp-
thectomy 247

37

37

MISCELLANEOUS

Clinical Entities—General Physiological Conditions

27 DAHL, L. Observations on Cancer of the Uterus 255

37 MANNING, G. A Contribution to the Semantics
of Carcinoma of the Genital Organs 255

37 WILLIAMS, P. F. Postabortal Hemolytic Strepto-
cococemia 259

- HARRIS, C M, BROWN, T H and DELCHER, H A. Abnormalities of the Kidney and Ureter. A Case of Double Kidney and Double Ureter with Review of the Literature. 260
- ARVOLO, Tuberculosis of the Salivary Glands. 27
- Blood**
- BROOK, G O. Blood Destruction During Exercise. Blood Changes Occurring in the Course of Single Day of Exercise. 247
- Blood and Lymph Vessels**
- WITTE, W C F and ZILBERG, H F. Traumatic Rupture of the Femoral Artery with Hematoma. 245
- CONRAD, Surgery of the Arteries. Transplantation of Arteries by the Nagcott Method. 245
- Surgical Diagnosis, Pathology and Therapeutics**
- CARROLL, O M. Extirpation of the Adrenals in Epilepsy. 245
- KRUEGER, H. Scaphitis. 245
- Röntgenology and Radium Therapy**
- DR. W. The Scientific Bases of Short Wave Length Therapy. 248
- LEVIN, I. The Intraperitoneal Insertion of Burned Capillary Glass Tubes of Radium Irradiation. Results in 7 Cases of Tumor of the Gastrointestinal Tract. 249
- COMBARD, J A. Statistics and Technique in the Treatment of Fibrosarcoma of the Uterus by Radiotherapy. 50
- BECK, M. What Is the Best Method for the Treatment of Uterine Fibrosarcoma by Means of the Röntgen Ray. 5
- CLARK, J G and KRYE, F E. The Treatment of Cancer of the Pelvic Organs with Moderate Irradiation. 5
- BROWN, H H. Radium and Röntgen Ray Treatment of Metastatic Testicular Tumors. 266
- DOUGLAS, H P and CARTER, J M. An X-Ray Demonstration of the Nephrochrysalis Passage, Normal and Obstructed. 269
- FRANKEL, G E and WIDOW, B P. A Case of Tubercular Granoma Treated with Apparatus Success by Radium. 7

GYNECOLOGY

- Uterus**
- HENDERSON, A. An Improved Method of Supporting the Bladder and Vagina After Vaginal Hysterectomy for Prolapsed. 53
- COMBARD, J A. Statistics and Technique in the Treatment of Fibrosarcoma of the Uterus by Radiotherapy. 50
- BECK, M. What Is the Best Method for the Treatment of Uterine Fibrosarcoma by Means of the Röntgen Rays. 5
- DAVIS, L. Observations on Cancer of the Uterus. 5
- Adnexal and Peri-Uterine Conditions**
- FRIEDMAN, Pyosalpinx Opening into the Urinary Bladder. Operation. Cure. 5
- HUNT, J C, and MARRAS, C. The Rubin Test and Its Therapeutic Application. 5
- SCHILLER, H. Does the Ovary or Corpus Luteum Control the Ovarian and Uterine Cycle? 5
- External Genitalia**
- ROSENBERG, The Formation of Vagina in Congenital Vaginal Malformation. 53
- ROSENBERG, The Formation of an Artificial Vagina. 53
- BULLOCK, H A. Utero Vesico Vaginal Fistula. 53
- Miscellaneous**
- CHAMBERLAIN, H C. Levator Hernia (Pudendal Hernia). Report of a Case Operated upon by the Combined Root. Review of the Twelve Previously Reported Cases. 54
- MATTHEWILLIAMS, G. A Contribution to the Statistics of Carcinoma of the Genital Organs. 55
- CLARK, J G and KRYE, F E. The Treatment of Cancer of the Pelvic Organs with Moderate Irradiation. 55

OBSTETRICS

- Pregnancy and Its Complications**
- LEFFLER, Pregnancy After Operation for Cancer of the Breast. 57
- Labor and Its Complications**
- WILSON, B P. Further Experience with Pituitary Extract in the Induction of Labor. 57
- BECK, A C. Is Interference Justifiable After Twenty Four Hours of Labor When No Other Indication Is Present? 257
- HOLMES, R W and BURROCK, A L. The Test of Labor in Relation to Cesarean Section. Comparative Results Obtained by Elective and Secondary Operations Based upon Personal Experience of Ninety Two Cases. 58
- HUNT, J C and VAN DOLERY, W H. Cesarean Section. Its Indications and Technique. 59
- Puerperium and Its Complications**
- WILLIAMS, P F. Postabortal Hemolytic Streptococcosis. 59

GENITO URINARY SURGERY

Adrenal, Kidney and Ureter

- HARPER, C. M. BROWN, T. H. and DYLLER, H. A. Neoplasms of the Kidney and Ureter Double Kidney and Double Ureter 260
- CRANFORD, J. G. The Nature and Significance of Renal Stones 260
- BARNET, J. D. Recurrent Renal Calculi 26
- HOTER, O. Obstruction of the Common Bile Duct and Anemia Due to Solitary Cyst of the Kidney 26
- ORLICK, F. The Partially Transperitoneal and Partially Extraperitoneal Operation on the Kidney: A transperitoneal Operation After Division of the Peritoneal Sac 26
- FURMAN, H. D. Supernumerary Ureters with Extra renal Openings 26
- JACOB, T. F. Extreme Dilatation of the Ureters 26
- ROCKEY, J. A Case of Cystic Enlargement of the Vascular Extremity of the Right Ureter and Its Treatment 26
- ASCHUR, P. W. Primary Tumors of the Ureter 26

Bladder, Urethra, and Penile

- SCHWARTZ, O. Investigations on the Physiology and Pathology of Bladder Function. Remarks on the Pathology of the Vesical Neck 264

- KATZBERG, H. L. Bladder Ulcer of the Bladder A Further Report 264

Genital Organs

- FELDER, E. Experiences with the Perineal Operation for Prostatic Abscesses and Prostatic Stones 265
- LEWIS, J. Infections of Prostatic Adenoma 26
- GAULDER, C. L. Traumatic Dislocation of Both Testicles 265
- SEELIGER, J. G. and HELLER, E. P. A Congenital Defect of the Anterior Abdominal Wall and Cryptorchidism Report of Case 266
- LECHTENSBERG, R. The Clinical Aspect and the Treatment of Cryptorchidism 266
- BOWEN, H. H. Radium and Röntgen Ray Treatment in Metastatic Testicular Tumors 266

Miscellaneous

- FELDMAN, A. Accurate Chromocystoscopy 267
- EMERSON, D. V. Calculous Anom. Report of Case 267
- WALKER, J. T. The Relation of Calcified Adrenal Glands to Urinary Surgery 268

SURGERY OF THE EYE AND EAR

Eye

- PASCHOFF, C. Preliminary Communication on Injury as Cause of Diabetes Insipidus with Bitemporal Homocyclopes 269
- DOUG, H. P. and CARTER, J. M. An X-Ray Demonstration of the Neurovascular Passageways—Normal and Obstructed 269

- WOOD, A. C. and KNAPP, A. The Diagnostic and Therapeutic Use of Uveal Pigment as Layers of the Uveal Tract and Sympathetic Ophthalmia 269
- RATNAPARKI, R. P. Cataract Extracted with Indotomy 270

SURGERY OF THE NOSE THROAT AND MOUTH

Nose

- EMER, I. F. S. Metal Inlays and Cobble's Splint Dressings 27
- WALSH, M. B. Report of Case of Bilateral Frontal Sinus Empyema, Subdural and Supratentorial Abscess, with Recovery 27
- HUXLEY, D. V. Total Blindness of Both Eyes in Boy 7 Years of Age Cured by an Ethmoid Operation and Opening of the Sphenoid Sinus 27

Throat

- FRANKLIN, G. E. Radiotherapy in Carcinoma of the Larynx, with Special Reference to Radium Needles Through the Thyroid Membrane 28

- LIVERTON, B. The Clinical Importance of Oedema of the Stylohyoid Ligament 271
- JACKSON, C. Notes on Peroral Endoscopy and Laryngeal Surgery 27

Mouth

- FISCHER, M. V. Harelip and Cleft Palate 27
- SCOTT, C. C. and DALLAN, E. M. The Results of Operations for Cancer of the Lip: The Massachusetts General Hospital, 1900-1919 27
- FRANKLIN, G. E. and WILKINSON, B. P. A Case of Tuberous Ganglionitis Treated with Apparent Success by Radium 27
- ARNO, J. Tuberculosis of the Salivary Glands 27

BIBLIOGRAPHY

GENERAL SURGERY

SURGICAL TECHNIQUE

Operative Surgery and Technique	273
Aseptic and Antiseptic Surgery	73
Anesthetics	73
Surgical Instruments and Apparatus	73

SURGERY OF THE HEAD AND NECK

Head	73
Neck	274

SURGERY OF THE CHEST

Chest Wall and Breast	74
Trachea and Lungs	75
Heart and Vascular System	7
Pharynx and Esophagus	75
Miscellaneous	75

SURGERY OF THE ABDOMEN

Abdominal Wall and Peritoneum	7
Gastro-Intestinal Tract	76
Liver, Gall Bladder, Pancreas, and Spleen	78
Miscellaneous	78

SURGERY OF THE EXTREMITIES

Conditions of the Bones, Joints, Muscles, Tendons, Etc.	79
Fractures and Dislocations	79
Surgery of the Bones, Joints, Muscles, Tendons, Etc.	280

SURGERY OF THE SPINAL COLUMN AND CORD

280

SURGERY OF THE NERVOUS SYSTEM

28

MISCELLANEOUS

Chemical Entities—General Physiological Condi- tions	5
---	---

Sera, Vaccine, and Ferments

8

Blood

8

Blood and Lymph Vessels

282

Surgical Diagnosis, Pathology, and Therapeutics

8

Roentgenology and Radium Therapy

28

Hospitals, Medical Education and History

283

Legal Medicine

283

GYNECOLOGY

Uterus	283
Adnexal and Peri Uterine Conditions	283
External Genitalia	283
Miscellaneous	284

OBSTETRICS

Pregnancy and Its Complications	284
Labor and Its Complications	284
Puerperium and Its Complications	284
Newborn	285

GENITO-URINARY SURGERY

Adrenal, Kidney and Ureter	285
Bladder, Urethra, and Penis	285
Genital Organs	285
Miscellaneous	287

SURGERY OF THE EYE AND EAR

E	287
Ear	287

SURGERY OF THE NOSE, THROAT AND MOUTH

Nose	288
Throat	288
Mouth	288

EDITOR'S COMMENT

FROM its inception it has been the purpose of the editors of the INTERNATIONAL ABSTRACT OF SURGERY to present to its readers accurate and discriminating reviews of the world's best surgical literature. How large a task this has become is suggested by the fact that in the 131 abstracts appearing in this issue twenty-one different American journals and thirty-three different foreign journals are represented. In addition to the articles which are represented by abstracts, every article with a surgical significance, appearing in the journals coming to our desk, is listed in the bibliography of current literature. The articles so listed in this issue represent fifty-five different American journals and 60 different foreign journals.

In this abundance of material certain articles are of particular significance in that they represent new ideas, or old ideas seen in a new light or that they indicate an error in theories that have previously been accepted as fundamentally correct.

It is the purpose of the editors to call attention from time to time in these columns to investigations and discussions that they believe to be of especial importance in order that such reports may receive the proper emphasis, and not be lost sight of in the abundance of material presented.

THE use of radium and the X-ray in the treatment of malignant disease and of uterine fibromyomata constitutes one of the most vital problems of present-day medicine. The constant attempt to bring the therapeutic agent into direct contact with the tissue to be treated is reflected in Mahler's suggestion (p. 220) that in the treatment of carcinoma of the larynx radium needles be passed through the thyrohyoid membrane directly into the affected tissue, and in Levin's report of two cases in which improvement followed the burying of capillary glass tubes, containing radium emanation in tumors of the gastro-intestinal tract (p. 49).

The effort to bring the therapeutic agent into direct contact with the tissue to be treated is

primarily due to the better results attained under such conditions. Another phase of the question, the effect of radiation from a distance upon normal tissues adjacent to those to be radiated, for instance the effect of the roentgen ray or of radium upon the large bowel and bladder in the treatment of uterine fibromyomata, has not yet received sufficient consideration. The surgeon is warned in the treatment of cancer of the pelvic organs to aoid causing radiation trouble by pushing the normal tissues aside with a well-placed vaginal pack (Clark and Keene p. 255) but no mention is made of the possible sclerosing effect of radiation upon the blood vessels of adjacent viscera, and of the after-effects of radiation upon these viscera. The Abstract is looking forward expectantly to reports of experimental work with the X-ray and radium that will determine the late results of radiation upon normal structures.

ONE of the most interesting and suggestive contributions to the literature of the month is the discussion on the treatment of non-malignant affections of the colon (p. 217) a symposium presented by five different surgeons at a recent meeting of the British Medical Association in Glasgow. To the surgeon who has come to regard any attempt to combat the symptoms of visceropneumonia by surgical method as middle-aged surgery it will come as a surprise to read that Waugh has operated with remarkably successful result upon 518 patients (the abstract of a former report covering 308 cases appeared in this journal in June, 1920, p. 44) because of symptoms due to an extremely mobile cecum and colon. Gray's experience, in the main, corroborates Waugh's conclusions.

As several of the writers in question have pointed out with reference to visceropneumonia this condition with its resulting complications—constipation, intestinal intorsion and chronic inflammation—is a disease of early adult life, and a X-ray measures which successfully counteract it become preventive medicine in its best sense.

INTERNATIONAL ABSTRACT OF SURGERY

APRIL, 1923

ABSTRACTS OF CURRENT LITERATURE GENERAL SURGERY—SURGICAL TECHNIQUE

OPERATIVE SURGERY AND TECHNIQUE

Burket, W. C., and McClure, W. B. An Aseptic Method of Intestinal Anastomosis: An Experimental Study. *Surg Gynec & Obst* 9 xxxv 3-6

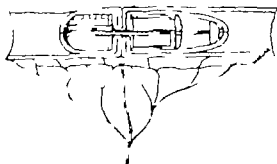
In the method described, the authors use an instrument formed of male and female halves. A protected cylindrical knife blade contained in the male half of the instrument cuts against the female half which consists of a solid block. The aseptic operation is performed as follows:

The intestine is resected between ligatures with the actual cautery and after the mesenteric vessels in the operative field have been cared for each cut end of gut is invaginated with half the instrument to such an extent that double pursestring sutures may be tied down over the outer end of the half of the instrument. The halves of the instrument are then brought together and the butted ends of the intestine anastomosed with interrupted mattress sutures. The mesentery is closed with continuous glove suture. When the gut ends have been completely sutured, the lumen is re-established by cutting out the intervening gut wall diaphragms by gently manipulating the cylindrical knife blade through the intestinal wall. The anastomosis is completed by sliding the instrument down the intestine well away from the site of the operation. It will then be passed out of the intestines by peristaltic movement.

This method has been employed frequently on freshly isolated pig intestine and also in aseptic operations on living dogs under ether anesthesia. Its advantages are summarized as follows:

The closed abutted ends of the gut are cut through and the lumen is promptly re-established without soiling of the operative field or the withdrawal of any material or instrumental device through the line of suture.

No mechanical device is left in situ to interfere with the healing, as in the use of the Murphy



Diagrammatic longitudinal section. Instrument is invaginated into gut ends and parts brought together for intestinal suture and manipulation of the cylindrical blade to cut out the intervening diaphragms of gut wall.

button. The cylindrical knife is removed from the field before the operation is completed.

3. The remaining intimated cuff of intestinal wall is of desirable length, and is neatly sharply and uniformly cut.

4. An anastomotic opening is obtained which in diameter closely approximates the gut lumen and prevents temporary obstruction or too great narrowing of the lumen.

5. Soiling is reduced to the minimum, dependent upon the effectiveness of the cautery and the skill with which sutures are placed in the submucosa without penetrating the mucosa.

WALTER C. BURKET, M.D.

ANESTHESIA

Meeker, W. R., and Fraser, E. B. Transverse Nerve-Block Anesthesia in Surgery of the Pelvic Floor and Its Viscera. *Surg Gynec & Obst* 9 xxxv 30

Block of the sacral nerves may be accomplished by four different methods: (1) epidural, sacral extradural, and caudal anesthesia induced by the

injection of anesthetic solutions into the sacral canal by way of the sacral hiatus, (3) block of the nerve trunks after the plexus has been formed, (4) paramedial, presternal, and anterior sacral anasthesia or block of the nerves at their exits from the anterior sacral foramina, and (5) transmedial anasthesia, or block by means of injections through the posterior sacral foramina.

In the first method 3 to 5 cm. of a 1 per cent solution of novocaine or bicarbonate solution are injected into the sacral canal. Anesthesia usually results within twenty or thirty minutes; its upper limit is variable but as a rule it includes the entire pelvic floor and viscera. This method fails to give operative anesthesia in 50 to 75 per cent of cases and is followed by toxic symptoms more frequently than other methods.

Block of the pudic nerve posterior to the spine of the ischium and on the medial surface of the inferior ramus of the ischium has been advocated. The methods are technically difficult and do not give extensive operative anesthesia of the pelvic floor even though both pudic nerves are properly blocked.

The perimedial, or paramedial, method is also technically difficult; its results being consequently undependable. It is usually combined with local infiltration of the tissues. It fails to cause complete operative anesthesia in about 50 per cent of cases.

For these reasons the transmedial method has been employed for the upper four sacral nerves, with low epidural injection for the fifth sacral and coccygeal fibers. Complete operative anesthesia resulted in 25 of 55 consecutive cases. In the three cases in which the anesthesia was not complete, it was sufficient for the completion of the operation without additional infiltration of the operative field or inhalation narcotics. The series included twenty-one patients who had a cold on the morning of the operation, forty-one who were in the hospital convalescing from a previous operation, thirty-two for whom local anesthesia was advised because of poor general condition, tuberculosis, who were sugar free at the time of operation, five patients with marked anemia, who had had previous transfusions, five patients with clinical pulmonary tuberculosis, in two of whom the condition was active at time of operation, and six obese women each weighing over 300 lb.

Complications and after-effects have been few and of no serious concern. The variety of operations performed by this method demonstrates that the block of the sacral nerves the entire pelvic floor is anesthetized with the viscera lying below the pelvic peritoneum. The more dependent part of the peritoneum is also anesthetized so that it may be opened and closed, but any considerable pull may be transmitted outside of the anesthetized field and cause pain.

Complications and after-effects have been few and of no serious concern. The variety of operations performed by this method demonstrates that the block of the sacral nerves the entire pelvic floor is anesthetized with the viscera lying below the pelvic peritoneum. The more dependent part of the peritoneum is also anesthetized so that it may be opened and closed, but any considerable pull may be transmitted outside of the anesthetized field and cause pain.

SURGERY OF THE HEAD AND NECK

HEAD

Murphy J B and Sturm, E. Heteroplastic and Autoplastic Tumor Grafts in the Brain. *J. Am. Med. Ass.* 9:22, 1920, 30.

Shirai of Tokyo reported that heteroplastic tumors grow readily when inoculated into the brains of normal adult animals. Previously tissue had been transplanted to different species only in the embryo and in adult animals which had been exposed to the roentgen rays.

The lymphoid cells are considered to form the defensive mechanism against tumor grafts because:

1. Numerous lymphocytes occur about heteroplastic graft.

2. Foreign tissues growing in the chick embryo cause no cellular reaction until after the eighteenth day of incubation, when the graft starts to disappear rapidly and completely.

3. A graft of adult chicken spleen renders the embryo resistant to heteroplastic tissues during the early stages of incubation.

4. Adult animals deprived of the major portion of lymphoid tissue are deprived of their ability to destroy the foreign tissues; in such animals grafts will grow actively.

5. Foreign tumors may be carried through several generations in irradiated animals.

The tumor inoculated transplantable mouse sarcoma into the brains of rats. When the graft came in contact with the ventricle there was a reaction which suggested the reaction caused by foreign graft in the subcutaneous tissues and was followed by necrosis of the graft. Of the grafts embedded in the frontal lobe at a distance from the ventricle, from 80 to 100 per cent grew in without causing cellular reaction.

Mouse sarcoma was successfully grown in the brains of rats, guinea pigs, and pigeons. A mouse carcinoma used as heteroplastic graft grew less rapidly.

A bit of the animal's own spleen inoculated into the brain with the heteroplastic tumor tissue prevented the growth of foreign cells. Of fifty rats inoculated with spleen and tumor 84 per cent showed complete inhibition of tumor growth. In 16 per cent only a few of the tumor cells were left. Of forty-eight control rats inoculated with sarcoma alone 83 per cent developed tumors, some of which replaced almost the entire frontal lobe. Spleenic tissue derived from another animal failed to inhibit the growth of the tumor.

Mice highly resistant to subcutaneous heteroplastic transplants of mouse tumor gave no evidence of this resistance when the tumor was inoculated into the brain.

WALTER C. BURKETT, M.D.

Federapfel, M. N. Harelip and Cleft Palate

Surg. Gynec. & Obst. 9: 2201, 1909

The repair of harelip should be done as soon after birth as possible. In most cases it is done at the end of the third or fourth week.

Proper pre-operative care is essential. The infant should not be allowed to nurse until the borders of the lip are brought together as much as possible and held by a strip of adhesive. The adhesive tape properly placed prevents the orbicularis oris muscle from pulling the lip from the midline and increasing the deformity.

In the operation for single harelip the lip must be freed from its attachment to the maxilla. The borders should be so cut that symmetry of the nostrils is readily obtained with an invisible scar and a perfect midline border with good contour.

The sutures should be so placed that the raw surfaces will be in contact without any curling or buckling of the edges. In order to prevent tension adhesive is fastened to the cheek on each side. The edges near the lip are turned in and a strong paraffin silk ligature is then passed through the tape into the lip, midway between the skin and mucous membrane, in the form of mattress suture. By tying the loose ends, sufficient tension can be brought to bear so that the approximating sutures will not be torn out by the sphincter-like action of the orbicularis muscle.

Great care is necessary in operating upon a cleft palate. In some instances mechanical appliances are more efficient than surgical correction of the cleft is alone.

JAMES C. BRADWELL, M.D.

Skrummons, C. C., and Daland, E. M. The Results of Operations for Cancer of the Lip. A Study of the Massachusetts General Hospital from 1909 to 1919. *Surg. Gynec. & Obst.* 9: 222, 1909

In reviewing the results of operations for cancer of the lip during a ten year period at the Massachusetts General Hospital the authors failed to find any new facts in regard to the etiology of the condition.

The total number of cases available for study was 187. The end result as learned in 38.

Specimens from 3 cases in which the end result is known are also available for study. An attempt is made to classify them into groups according to the degree of malignancy as indicated by the differentiation of the cells and the number of mitotic figures. It appeared from the results in these groups that, other things being equal, such as the duration and extent of the growth, the amount of differentiation of the cell has distinct bearing on the prognosis, the prognosis being better the greater the differentiation.

The presence of palpable glands did not necessarily mean that metastases had occurred, as in many cases in which the presence of glands was noted in the histologic pathologic examination failed to show cancer. The presence of demonstrable metastatic cancer in the glands was a grave sign.

The first sign was described as a "sore" or "cold sore" in eighty-three cases, a scab in nineteen, a wart or tumor in thirty-eight, and a crack, blister, cut, or pimple in the remainder. The presence of palpable glands had little relation to the size or duration of the tumor except in the obviously far advanced cases. The growth was situated on the left side in fifty-seven cases.

The radical operation was performed in 122 cases. In seventy-three, the glands were removed from one side of the neck, and in fifty-nine from both sides. The palliative operation was performed in forty-one cases, the growth being removed from the lip without dissection of the glands of the neck.

In the cases of radical operation there were three postoperative deaths. There was no operative mortality following the palliative operation.

With one exception, the postoperative complications were due to some form of infection.

Secondary operations for local recurrence of the disease were performed twice, both of the patients are well three or more years after the operation.

In seven cases in which the neck had been previously dissected, a second extensive dissection was performed for recurrence. All of these patients are dead, two died as a result of the operation and five of the disease.

The end results of the radical operation in ninety-eight cases are known: sixty-eight patients are living and well without evidence of the disease more than three years after the operation, twenty-seven died from recurrence of the disease and three died as the result of the operation. The cures following the radical operation therefore equaled 63 per cent.

The relation of the size of the growth on the lip to the prognosis is shown by the small percentage of cures in the cases requiring a plastic operation to close the defect after the excision of the growth. Of fourteen patients traced, only four are living and well.

Of nineteen patients traced who had involvement of the glands, only five are well, while of seventy-two without gland involvement sixty-three are well.

In many of the cases the site of recurrence could not be determined. In the only patient dying of recurrence on whom an autopsy was performed there was local recurrence only.

The palliative operation was performed in forty-one cases. Most of these the radical operation was contra-indicated on account of the patient's physical condition or age. The results are known in thirty-five cases of this group. In twenty a three-year cure was obtained.

The average length of life of all patients dying of recurrence was approximately two years from the date of operation. When the glands removed at operation showed cancer the length of life was slightly shorter than the average. With one exception in the cases of patients dying of the disease, the recurrence developed or death occurred within the three year limit. One patient died of glandular recurrence seven years after the primary operation.

JAMES C. BRADWELL, M.D.

NECK

Mishler G. L.: Radiotherapy in Carcinoma of the Larynx, with Special Reference to Radium Needles Through the Thyroid Membrane. *J. Radiol.* 9: 131, 51

The most recent method of treating carcinoma of the larynx consists in the direct application of several 3 mm tubes of radium following a preliminary tracheotomy.

Radium may be applied to carcinoma of the larynx directly by four methods: (1) the insertion of emanation seeds into the diseased tissue by direct laryngoscopy; (2) the introduction of radium needles attached to a strong thread; (3) the application of radium under direct vision through a laryngotomy incision; and (4) the insertion of radium needles through the thyrohyoid membrane.

A disadvantage of the first method is that the emanation seeds may be inhaled, an occurrence leading to abscess of the lung. The second method is contra-indicated if the tissues are friable because under such conditions it is extremely difficult to keep the needles in place. The insertion of needles into the diseased tissue through the thyrohyoid membrane was first tried by the author on cadavers and then used in twenty cases reported in this article.

External radiation of the roentgen ray was given to devitalize the primary cancer cells and metastatic lymph nodes, and the radium was introduced about a week after the preliminary tracheotomy. The needles were sterilized by suspending them in boiling water and were then attached to sterile copper ligature wire. The author states that iodine should not be employed in sterilizing the skin as it causes a dermatitis. Ten milligram needles can be inserted approximately 1 cm apart and left in place four to six hours. Considerable edema will result, but this will be taken care of by the preliminary tracheotomy. If the disease has not completely disappeared at the end of six weeks the procedure may be repeated.

The treatment outlined retarded the progress of the condition in the author's cases, but sixteen of the twenty-three patients ultimately died of the disease. The author draws the following conclusions:

1. A preliminary tracheotomy is desirable.
2. The roentgen ray applied externally gives at least partial relief of the symptoms.
3. The insertion of radium needles into the diseased tissue through the thyrohyoid membrane is practical and its results justify further trial of the method.
4. As the condition tends to recur the patient should be kept under close observation for a long time.

PAUL W. SWERTZ, M.D.

Kloss, H., and Hafftwig, A.: Malignant Struma (Des Struma maligna). *Arch. Klin. Chir.* 9: 2, 4, 787

In the vicinity of Frankfurt about 3 to 4 per cent of nodular goiters become malignant. Carcinoma occurs most frequently in districts where goiter is

endemic. A nodular goiter also precedes the cancer and injures to the tissues may favor the cancerous degeneration. Females are more often affected than males of twenty patients, seventeen were women. The condition occurs most frequently in the fifth decade of life. Most malignant growths developing in goiter are carcinomas. The metastases occur chiefly in the lungs and the bones, particularly the spine, sternum, pelvis, and ribs. The development of the cancer is recognized by an accelerated growth of the goiter, an increase in its consistency and a decrease in its mobility, difficulty in swallowing, and, in the later stages, respiratory disturbances. In the Mairgung district the development of the symptoms of epithelioid goiter is an important early symptom of malignant growth. Occasionally high temperatures are observed. Carcinoma of the thyroid is rare.

Exploratory puncture is contra-indicated. Laryngoscopy should be done only by experienced physicians. Tracheostomy is justified only when the radical operation can be performed immediately afterward if malignancy is found. The average duration of malignant goiter is about two years. The treatment should be total extirpation of the thyroid gland with postoperative roentgen irradiation. In cases of progressive infiltrating growth the roentgen irradiation alone, in accurate dosage, is preferable to surgical treatment. Kloss (2)

Rosser C. A.: Thyroidectomy. A Modified Technique. *J. Am. Med. Ass.* 6: 1415, 1916

Following resection of the thyroid we too often see (1) a raw area underneath the flap, (2) a tender nodule where the depressor muscles were sutured, (3) an annoying adhesion between the trachea and skin at the point of drainage which also causes widening of the scar or (4) an unusual deepening of the suprasternal notch due to a loss of the isthmus and retraction of the skin by the adherent trachea.

The author presents modifications in technique designed to overcome these sequelae. 1. Goiters of medium size he extends his incision through the deep cervical fascia, reflecting the latter as the lower layer of the flap. This permits sufficient retraction of the sternohyoid muscles to give the desired exposure without cross sectioning. The collar incision of Kocher as originally described and generally practiced today extends only to the deep fascia, leaves the sternohyoid and sternothyroid muscles unincised and is most applicable to large goiters in which transverse division of the sternohyoid and sternothyroid muscles is necessary and to small goiters for which only moderate exposure is required.

Adhesion of the platysma to the deep fascia is followed much oftener by a raw indentation than is adhesion of the fascia to the deeper muscles. In order to prevent adhesion of the skin to the trachea the author passes a rubber tube down through a stab wound in the ribbed muscles and brings it out through the line of incision lateral to the supra-

sternal notch. This permits closure of the ribbon muscles over the trachea and suture of the skin in the midline where it is thinnest and the platysma is absent.

For ligation of the inferior thyroid artery Roeder makes a 1 in. incision in the line of the full collar

incision to be made later. If the patient withstands the operation better than anticipated slight extension of this incision will permit resection of the lobe. Reflection of the deep fascia with longitudinal splitting of the ribbon muscles gives ample exposure.

S. J. SZOZAR, M.D.

SURGERY OF THE CHEST

CHEST WALL AND BREAST

Bull, P. Extrapleural Thoracoplasty in the Treatment of Pulmonary Tuberculosis. *Bull. W. J.* 9, 14, 7

On the basis of seventy five cases of extrapleural thoracoplasty Bull comes to the following conclusions:

In unilateral or mainly unilateral pulmonary tuberculosis which is not cured by rational expectant treatment or by artificial pneumothorax, good results can be obtained by means of extrapleural thoracoplasty.

On the whole, it may be said that the indications for extrapleural thoracoplasty coincide very closely with those for artificial pneumothorax and the former should be tried when the latter cannot be used. Care must be taken in determining the condition of the other lung. Tuberculosis of the larynx or of one kidney does not constitute a contra-indication. Tuberculosis of the larynx will often heal after successful thoracoplasty. This operation is best performed in two stages.

Bull has done most of his work with the aid of local anesthesia but is becoming more inclined to the use of general anesthesia. In the first stage of the operation he resects from the eleventh to the sixth or fifth rib. In the second stage, 10 or three weeks later he resects the remaining upper ribs. After the fourth rib has been resected he performs apicolectomy which, in addition to collapsing cavities in the apex, facilitates the resection of the upper ribs.

Fat implantation after the method of Tuffier is done to compress the pex still further. Seven centimeters of the eleventh rib, 1 cm. of the tenth and ninth ribs, 15 cm. of the following ribs including the fourth and as much as possible of the upper ribs are resected. It is important to resect backward far beyond the costal angle up to the costal tubercle.

One of the chief unpleasant sequelae is dyspnea. This is due to a great extent to mediastinal flutter and soon disappears spontaneously.

The operation is followed by scrobous with the convexity toward the side operated upon, due to paralysis of the long muscles of the back on this side.

The immediate mortality in the author's series of cases was 1 per cent. A three year cure was obtained in about one in three.

RALPH B. BETHA, M.D.

Rud, H. Fibro-Adenoma of the Breast in the Male (Ueber Fibroadenome der Mamme bei Männern). *Heft. Tid.* 922, 127, 53

Carcinoma of the male breast is not rare. Benign tumors are less common. According to Williams statistics regarding 5,43 neoplasms, 2,422 (5 per cent) involved the breast, and of the latter twenty five (1 per cent) involved the male breast and only six were benign.

Among malignant tumors carcinoma stands first; the benign tumors of the male breast are fibro-adenoma, fibroma, adenoma, lipoma, atheroma, myoma, tuberculoma, syphiloma, and cystic tumors. Myxoma, angioma, enchondroma and mixed tumors are very rare.

Five cases of fibro-adenoma of the male breast observed by the author are reported. All of them occurred in men between the ages of 8 and 2 years. They ranged in size from that of a hazelnut to that of a mandarin. In no case was the nipple retracted. Malignant change is possible. In some circumstances it is not easy to make a decision regarding the presence or absence of malignancy from the histologic picture. In the author's opinion sharp demarcation of the tumor indicates a benign growth only in the female. In the male, diffusely growing fibro-adenomas are found.

In the differential diagnosis gynecomastia and mastitis pubescentium virilis can be easily excluded. In four of the five cases reported, trauma preceded the tumor by from three weeks to eight months. Tumor frequently develops from chronic mastitis. While symptoms of mastitis are present the treatment should be conservative. Later the tumor should be excised. If the tumor is of diffuse growth, amputation of the breast with removal of the axillary glands is indicated. If the tumor is circumscribed, extirpation usually suffices.

PRINZ (2)

TRACHEA AND LUNGS

Balboa, G. M. Hydatid Cyst of the Lung. *Boston M. & S. J.* 922, 127, 579

Echinococcus cyst of the lung is one of the conditions to be ruled out in cases of pulmonary disease with bloody sputum or frank hemoptysis, especially among the immigrant classes from continental Europe and Asia Minor. Of late years the number of cases of echinococcus cyst of the lung which have come to light has increased because of the more extensive use of the X-ray in the study of chest conditions. The disease is usually unilateral. In

most cases it is on the right side and at the periphery of the middle portion of the lung.

If distal cysts of the lung may be closed or open. The open cyst is one that has ruptured into a bronchus or lung tissue. Expulsion of part or all of the contents of the cyst may occur. Membrane vesicles and scolices have been found in the expectorated material. The contents of the cyst may be clear or purulent fluid. A common sign is bloody sputum or hemorrhage.

The course of the disease is chronic. Spontaneous cure is very rare. The symptoms may simulate those of almost any pulmonary infection. Not until the cyst ruptures or the lung becomes inflamed will the patient become conscious of any trouble. Eosinophilia is rarely present. The complement fixation test, when positive, is confirmatory but when negative does not rule out the condition. Exploratory puncture of the cyst is inadvisable because of the serious sequelae which may follow its rupture.

The author reports two cases. The second was treated with the X-ray but there was no improvement or change in the X-ray signs. Whenever possible, the disease should be treated surgically.

RALPH B. BETHMAN, M.D.

Hedinger E. Fatal Congestive Hemorrhages in the Lung and the Central Nervous System Due to Momentary Bodily Exertion and Their Relationship to Perthes' Pressure Congestion (Über tödliche Stauungsblutungen in den Lungen und im Zentralnervengewebe bei momentaner starker körperlicher Anstrengung und ihre Beziehung zur Perthes'schen Druckstauung). *Schweiz med Wochenschr.* 9, 1, 10, 833.

A case is reported in which poplery of the lung with hemorrhages in the brain and spinal cord was caused by momentary overexertion. The clinical course and the autopsy findings indicated hemorrhage due to active congestion in contrast to the hemorrhage of Perthes which is due to passive congestion caused by compression of the trunk.

DIAMONTER (2)

HEART AND VASCULAR SYSTEM

Pleth, V. Cervical Sympathectomy as Means of Stopping the Pain of Angina Pectoris. *A = J Surg.* 9, 1237, 300.

Jonasson removes the left cervical sympathetic nerve and its ganglia to relieve the pain of angina pectoris. In the four cases in which the author performed this operation the pain ceased immediately. Pleth has used the same treatment also in cases of trifacial neuralgia and has seen no ill effects. Unobjectionable to it provided preliminary hypodermic injection of atropine subcutaneous was given about half an hour before the operation and traction on the nerves was avoided. In several cases of bilateral facial neuralgia he operated on both sides of the neck.

The temporary application of Crile clamp to the common or the external carotid artery greatly

facilitates the operation by keeping the blood flow.

Pleth concludes that the cutting of the sympathetic nerve causes a vasospasm with subsequent vasodilation which permanently floods the painful anemic parts with blood.

The operation is not regarded as a cure for the underlying disease causing the angina pectoris, being recommended merely to relieve the pain. The suppression of the paroxysms of pain does away with the usual cause of sudden death in cases of aortitis as it affects mainly the origin of the vessel where the network of nerves is especially dense and the pain is exceptionally severe.

WALTER C. BURRITT, M.D.

PHARYNX AND ESOPHAGUS

Steiner O. Multiple Cancer Formation. Carcinomas of the Vallecula Epiglottica and of the Esophagus (Zur Kenntnis mehrfacher Krebsbildung. Carcinome der Vallecula epiglottica und des Esophagus). *Verh Klin Wochenschr.* 149.

The author reports two cases of carcinomas involving one of the pharynx (vallecula) and the esophagus in which the tumors were separated by a wide stretch of healthy tissue.

CASE I. A tumor of the vallecula the size of half nut was shown by biopsy to be cancerous. After ligation of the lingual artery the growth and glands were extirpated under conduction anesthesia by splitting the cheek and reflecting the lower lip upward. Death occurred on the sixth day from pneumonia. Autopsy revealed a cancerous of similar histologic structure in the lower third of the esophagus. Except for an occasional sticking pain over the lower portion of the sternum, there were no signs of an esophageal tumor during life.

CASE II. A carcinoma of the esophagus was diagnosed by the use of bougie the X-ray, and esophagoscopy. At the same time a tumor of the vallecula was found by laryngoscopy. Biopsy showed that the tumors were cancerous of similar histologic structure. Clinically there were no symptoms attributable to the tumor of the vallecula, the condition being diagnosed only on laryngoscopic examination.

Only one case of multiple primary carcinoma of the pharynx (tongue) and the esophagus is reported in the literature. Metastatic formations do not occur very often in carcinoma of the esophagus as compared with carcinomas of other parts. True metastases in the esophagus or the pharynx with carcinoma of other organs has not been described. Secondary involvement of the esophagus or the pharynx by the spreading of carcinoma from one to the other is more frequent. Primary carcinoma of the pharynx is not very rare. Inoculation metastases from operation have been reported.

The relationship to each other of the carcinomas of the esophagus and the pharynx in the cases observed cannot be determined. It is probable, however that in both cases the carcinoma of the

oesophagus was the primary lesion and the carcinoma of the pharynx a metastasis.

Radical operation for a carcinoma at the base of the tongue or of the pharynx should be done only

after it has been determined by careful examination (sounding, roentgenography and particularly oesophagoscopy) that the oesophagus is not affected by carcinoma.

Sovero (2)

SURGERY OF THE ABDOMEN

ABDOMINAL WALL AND PERITONEUM

Moschowitz, A. V. The Anatomy and Identity of "Encysted" and "Infantile" Hernia. *Surg. Gynec. & Obst.* 9, xxvii, 7.

They first described infantile hernia several years before Cooper's first account of encysted hernia. The author regards the nomenclature as arbitrary.

All abnormalities of the hernial can be traced to fault closure of the processus vaginalis. In its descent into the scrotum the testis is accompanied by the processus vaginalis peritonei. After the complete descent of the testis the vaginal process becomes shut off at the abdominal end and just

I hernia into the funicular process the vaginal process has become shut off at its testicular end but not also at this point. The tunica vaginalis testis is normal. When abdominal contents pass through the open abdominal end of the vaginal process a hernia results. This form should be called hernia into the supratal testicular vaginal process. It is characterized by a very thin sac and the absence of the slender cord of the obliterated vaginal process.

I encysted hernia the vaginal process has become shut off at the abdominal or proximal end but not elsewhere. If hernia forms it descends in front of the cord and vaginal process. If the vaginal process contains an exudate and hernia forms, the

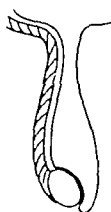


Fig. Congenital hernia

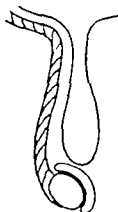


Fig. Hernia into the funicular process

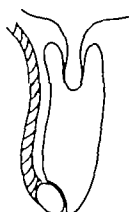


Fig. 3 Encysted hernia

above the testis while the intervening portion becomes obliterated to a fine cord-like structure within the confines of the spermatic cord, and the distal part pervades as the tunica vaginalis testis.

The closure of the vaginal process does not follow any set rule.

I congenital inguinal hernia the processus vaginalis has failed to close at both the testicular and the abdominal ends and forms a sac into which some unusual effort will force abdominal contents and thus form complete scrotal hernia. The author believes that hernia into the vaginal process

could be a better name for this condition. This hernia is characterized chiefly by the presence of the testicle within the hernial sac and by the exceeding thinness of the sac.

sac bulges into the closed off vaginal process and produces the so-called encysted hernia. At operation the surgeon may open the vaginal process by incising the sac and will be surprised to find no communication with the general peritoneal cavity. The true sac protrudes on the posterior

all of the sac of the vaginal process. This form is differentiated from simple inguinal hernia associated with ordinary hydrocele of the tunica vaginalis testis by the ease or difficulty with which the hernial sac can be separated from the hydrocele sac. In encysted hernia they are densely adherent to one another and cannot be separated.

In infantile hernia the maldevelopment is practically identical with that of encysted hernia but instead of becoming invaginated in the pro-

formed sac, the hernial protrusion descends behind the sac. In the author's opinion there is no material difference between these two forms of hernia.

WALTER C BURKET M D

Capps, J A and Coleman, G H. Experimental Observations on the Localization of the Pain Sense in the Parietal and Diaphragmatic Peritoneum. *Arch Int Med* 912, xxx 378

The authors' knowledge of sensation in the abdomen and its viscera is based largely on the careful and ingenious observations of other investigators. It is agreed that the hollow viscera and omentum give no sensation response to heat or cold or cutting or clamping.

One investigator found that the parietal peritoneum is sensitive to irritation especially when inflammation is present and from his experiments concluded that all visceral pain is the result of inflammation and traction on the parietal peritoneum. Another investigator has furnished convincing proof of true visceral pain (splanchnic) induced by tension of the hollow viscera, and in addition that the somatic pain originating in a sensitization of the posterior spinal roots and a radiation of painful sensations along the course of the corresponding spinal nerves to the skin and deeper tissue layers.

The peritoneal membrane lining the abdominal wall has received less attention from experimenters than the viscera, while the peritoneum covering the under surface of the diaphragm has remained almost terra incognita to surgical explorers who have been interested in charting areas of sensation by direct experimental methods.

The chief purpose of the studies reported in this article was to determine the localization of pain due to stimulation of the parietal and diaphragmatic peritoneum. The authors' experiments were carried out by a method previously employed by one of them in the study of sensation in the pleural cavity. After partial anesthetization of the skin, an ethyl chloride trocar was inserted through the abdominal wall until the end moved about freely. The point was then withdrawn and through the cannula a long silver wire, one end of which was beaded and smooth and the other relatively sharp, was passed. Both ends were slightly curved in order that they might be brought more easily into contact with the abdominal wall. In the earlier experiments patients with ascites were chosen because the fluid distended the wall and facilitated exploration. Recently, however, air has been injected, a method which has proved harmless.

The results of the experiments are summarized as follows:

The parietal peritoneum and its underlying tissues, so far as explored, namely all the anterior median areas and the lateral areas as far as the anterior superior spines, are sensitive to pain from the strong pressure of a smooth point or the light pressure or lateral movement of a rough point of wire.

2. The pain elicited by stimulation of the parietal peritoneum is localized with considerable accuracy by the patient, the error being less than 10°.

3. The observations confirm the conclusion of Ramsdorn and Lennander that the parietal peritoneum is devoid of pressure sense.

4. The peritoneum covering the diaphragm, devoid of the sense of pressure as applied by light contact or stroking with a beaded wire point, but is acutely sensitive to strong pressure with beaded point and to light contact with a rough point.

5. The location of pain from stimulation of the diaphragmatic peritoneum is never in the diaphragm itself. It is always referred to some distant part. Stimulation of the outer margin causes diffuse pain over the lower costal region and subcostal abdominal wall. Stimulation of the central portion causes pain over a sharply limited point somewhere along the trapezius ridge. These impulses are doubtless carried by afferent fibers of the phrenic nerve to the cervical cord of the fourth cervical segment. The pain has not been noted along the course of the phrenic nerve itself. (Continued)

GEORGE Z. BARNER, M D

GASTRO-INTESTINAL TRACT

Wilson, R T. Peptic Ulcer. *J Radiol* 1922, 15, 524

The records of 344 patients examined roentgenologically for gastro-intestinal disturbances or symptoms or signs referable to pathology of the digestive system were studied. In 363 cases the roentgen diagnoses as peptic ulcer. In 30 of these the lesion was believed to be gastric ulcer and in 37 duodenal ulcer. One hundred and eleven of these cases came to operation and in 13 of them the X-ray diagnoses was confirmed. Among the 248 cases in which the diagnosis was negative there were five in which peptic ulcer was found at laparotomy.

As a result of these studies the author is convinced that such indirect signs as variations in peristalsis and retention beyond the usual limits are of doubtful value in the diagnosis of peptic ulcer. It regards deformity as the one satisfying positive sign. More reliance is to be placed upon the fluoroscopic examination than upon roentgenograms. The latter are of value only as a record, for confirmation or for demonstration. No case was lesion demonstrated roentgenographically that had not been seen previously on the fluoroscopic screen.

ANDREW HARRIS, M D

Finckh, M. Peptic Ulcer. (1) Deformities of the Viscus. E. Identified by the X Rays, Compared for the Better by Treatment. *Arch Int Med* 9, 11 63

As it is claimed by some surgeons that the true chronic gastric ulcer evidenced by typical clinical and roentgen findings can be cured only by surgical treatment, the author presents twelve cases of peptic ulcer in which the results demonstrate un-

unmistakably the success of medical treatment. In all of these cases constant deformities were seen on roentgen examination. Five also had a typical penetrating (callosus) ulcer of the lesser curvature, one a penetrating ulcer of the pylorus and six, constant deformities of the cap. These twelve cases were treated by duodenal alimentation. Subsequent roentgen examinations revealed normal configuration of the stomach and duodenum. There was also a return of general well-being.

A few of these cases are reported in detail but the histories of the rest are given in table form. Roentgenograms and outline sketches of the deformities before and after treatment are included in the article.

On the basis of his experience the author concludes that as a general rule most varieties of peptic ulcer, even the graver forms, are amenable to medical treatment. Duodenal alimentation was applied in his cases as a good method of resting the affected part and giving it ample nutrition. Einhorn does not doubt that similar results may be obtained by other methods of treatment, but claims that their methods take somewhat longer to effect a cure.

ADOLPH EINHORN, M.D.

Hammer A. W. Cancer of the Stomach. *J. Amer. Med. Assoc.* 922 1914, 634.

More than 30 per cent of all cancers in civilized men are found in the stomach. Heat is considered by many a predisposing cause. Locomotive engineers whose skins are for years exposed to the heat from the fire box of the engine develop cancer of the legs. Australians develop cancer of the face which originates from heat irritation. Chinese men who eat their rice extremely hot have cancer of the throat and esophagus, while their wives, who eat later and usually of colder rice do not have this cancer.

The percentage of cancers of the stomach originating in ulcers is given variously. One author says 3 per cent, May Robson says 30 per cent and the Mayo Clinic, 60 per cent.

Hammer mentions five types of operation done for gastric cancer but discusses gastrectomy primarily. For successful outcome it is necessary that gastrectomy be done before there is extensive lymphatic involvement, before extensive adhesions have formed and before secondary growths have developed. Even total removal of the stomach is in no way incompatible with good health and long life. Mayo is quoted as reporting nine operations in which the entire stomach was removed, only enough of the gastric tissue being left for anastomosis. Of 65 patients subjected to resection of the stomach one lived fifteen years after the operation and sixty-two lived five years or longer.

May Robson says, "I cannot help feeling that far too gloomy a view is taken of cancer of the stomach for if the disease is caught early and wide excision is performed, care being taken to remove the lymphatic area of the stomach with the glands along

the lesser curvature, results of a most favorable nature will award our endeavor."

The roentgen ray is of the greatest value in the diagnosis. In 95 per cent of cases of gastric carcinoma the ray will show the condition before the development of appreciable symptoms. A persisting anemia calls for such an examination.

P. W. SWARTZ, M.D.

Cromarty R. F. Some Observations on the Surgery of Duodenal Membranes, with Call-In Report of the Results of Treatment. *Canadian M. Ass. J.* 922 1914, 876.

Duodenal membranes were removed in forty cases operated upon at the Bigelow Clinic in the last two and one-half years. Such membranes vary from sheets closely overlying the duodenum and fixed at the omental and mesocolic attachments to dense cord-like bars spreading out over the duodenum from the liver or colon. Those of the latter type cause distinct constriction, while those of the former type produce longitudinal puckering of the duodenal wall and interfere with its muscular function.

Duodenal membranes are frequently present in cholecystitis, but may or may not be attached to the gall-bladder.

A study of many cases demonstrates that these membranes cause very definite symptoms. In order of frequency, those most common in cases operated upon are (1) gnawing or cramping pain in the epigastrium in 75 per cent, (2) tenderness in the epigastrium in 50 per cent, (3) eructations of gas in 50 per cent and (4) nausea or vomiting in 45 per cent. Seventy per cent of the patients have hyperacidity of the gastric contents. The condition differs from duodenal ulcer in that the pain is persistent, pulling and gnawing and may be made worse by the ingestion of food, jarring, and lifting. Tenderness is usually persistent. Cholecystitis is differentiated by the location of the pain and the tender point on the skin.

The final diagnosis has been made on the basis of the fluoroscopic findings which vary with the site of the membrane. The duodenal cap may appear to have been sheared off on one surface and will not fill properly. The filling defect is frequently smooth and regular without the acute indentations found in ulcer. The cap may be spastic and fill only under much pressure. The cap and the first part of the duodenum may be drawn vertically upward out of the normal location. The second part of the duodenum may be drawn upward and to the right. The findings show mechanical interference.

Some cases have been diagnosed first as necrosis or chronic appendicitis with reflex gastric spasm. Medical treatment does not give relief.

In the author's opinion the membranes are usually due to inflammation, probably inflammation of the gall bladder or that due to duodenal ulcer or local used peritonitis.

Surgical treatment necessitates free exposure of the duodenum. Fibrous or cord-like membranes

are cut parallel to the duodenum through vascular parts, trimmed, and then allowed to retract after ligation of the bleeding points. Membranes closely applied to the duodenum must be elevated and cut without damaging the peritoneal coat. The duodenum is in no way loosened from its attachments. After all the membranes have been removed the surface of the duodenum is covered with sterile vaseline.

The results in the cases operated upon as determined by a questionnaire showed: (1) symptoms as a whole much improved, 80 per cent, slightly improved, 55 per cent; (2) epigastric pain present in 6 per cent, cured, 33 per cent, relieved, 55 per cent; (3) belching of gas present in 60 per cent, improved, 55 per cent; (4) epigastric tenderness present in 30 per cent, cured in 47 per cent, relieved in 30 per cent; and (5) nausea and vomiting present in 50 per cent, relieved in 80 per cent. In the absence of epigastric pain and tenderness, surgical removal of the duodenal membranes gave the poorest results.

The author concludes that this syndrome, together with the fluoroscopic findings, establishes the entity of duodenal membranes, and that surgical measures are justified.

WALTER C. BURKET, M.D.

Jewsbury R. C. Two Cases of Duodenal Obstruction in Infants. *Proc Roy Soc Med Lond* 1922, sec. xvi, Sect. Stud. Inf. Child, 10.

CASE 1. Congenital stenosis of the duodenum. A full term female child, who was apparently normal at birth, began to have attacks of projectile vomiting of bile-stained material on the third day. These attacks recurred two or three times a day about one hour after feedings, with the exception of the third, fourth, and fifteenth days. On its admission to the hospital on the nineteenth day the child was emaciated, weighing only 4 lbs. 9 1/2 oz. The legs were drawn up, and there was marked peristalsis from left to right every half to one minute. A rounded swelling extended from the left costal margin downward to below the umbilicus and to the right costal margin where small indefinite masses were felt. X-ray examination demonstrated a greatly distended stomach and dilation of the first and second portions of the duodenum. Very little food had passed after 12 hours. The child had small infrequent bowel movements, continued to vomit after feedings, and died on the twenty-ninth day.

Postmortem examination showed the stomach to be grossly hypertrophied. The pylorus was not thickened, but the pyloric lumen was larger than normal. The first and second parts of the duodenum were dilated and the duodenal walls thickened because of obstruction due to marked constriction in the third part. There was no evidence of external compression.

CASE 2. Congenital obstruction of the bowel at the duodenojejunal junction. The patient was a wasted, slightly jaundiced male child, aged 9 days, who had had attacks of projectile vomiting of bile-stained material since he was 3 days old. The stomach was dilated and showed peristalsis from left

to right. The stools were intermediate between meconium and a milk stool. After taking 100 of breast milk the child became uncomfortable and vomited a larger quantity of fluid than he had ingested. Roentgen-ray examination after a barium meal showed retention of most of the meal for sixteen hours. Constriction of the first and second parts of the duodenum was suggested. The child vomited after every feeding and died on the thirteenth day.

A topey revealed a markedly dilated and hypertrophied stomach and duodenum. Below the duodenojejunal junction the bowel was very small and shrunken. The cecum was abnormally high under the liver. Obstruction in the duodenum was caused by pressure from external structures, particularly the right coeliac artery. There was no abnormal narrowing of the duodenum itself.

A helpful factor in the differential diagnosis between pyloric and duodenal obstruction is the bile-stained vomitus which appears in duodenal obstruction. Thompson has seen three cases of pyloric stenosis, confirmed by postmortem examination, in which the vomitus contained bile. Marked visible peristalsis occurs much later in pyloric stenosis than in duodenal obstruction.

The author believes that gastrotomy is the operation of choice if the patient is seen early; the diagnosis is correctly made, and the child is strong enough to withstand surgical treatment.

The author quotes Cantley's summary of the characteristics of duodenal stenosis: Vomiting with the usual signs of obstruction is the characteristic feature and may occur from distention due to normal secretion without the ingestion of food. In 50 per cent of the cases the vomitus is bile-stained. Hiccups are not uncommon. Lassitude, wasting, and constipation are marked. Dilation and hypertrophy of the stomach and the first part of the duodenum are associated with marked gastric peristalsis. Many of the cases are those of premature infants.

WALTER C. BURKET, M.D.

Kleinschmidt P. The Treatment of Carcinoma of the Papilla of Vater (*Zur Behandlung des Carcinoms der Papilla Vateri*). *Deutsche med. Wochenschr.* 1922, xiv, 7.

Two cases of obstruction of the common bile duct by tumor at the papilla of Vater are reported. In both the diagnosis of neoplasia was made after incision of the anterior wall of the duodenum and circumsection of the papilla.

The localization of tumor in the common bile duct can be established only after exposure. Therefore the best method of operation is resection of the duodenum from the pylorus up to the inferior horizontal portion. From the practical standpoint, however, this is applicable only rarely as the patient condition is usually poor and the surgeon must confine himself to excision of the tumor. The only permanent cure reported is due to excision.

CASE 1.

Lane, W. A., Waugh, G., Gray H. M. W., Pater-
son, H. J. and Walton, A. J. The Treatment
of Non-Malignant Affections of the Colon. *Brit*
Med J 1922, 4, 4

SIR W. ARBUTHNOT LANE

All abnormal conditions of the colon are direct or indirect results of intestinal stasis. There are two groups: those in which reaction is present, and those in which reaction is absent.

Stagnation of the intestinal contents in the pelvic colon causes the formation of bands on the under-surface of the mesentery supporting the juncture of the iliac and pelvic colon. These bands soon develop into distinct membranes, the first and last kink, which gradually contract, fixing the colon in the iliac fossa and diminishing its lumen by angulating it and rotating it on its long axis. The fallopian tube and ovary may also become fixed by this membrane. A condition which may result in extra-uterine pregnancy, teratoid cystic disease of the ovary and particularly in pain on the left side of the menstrual period due to the passage of intestinal contents through an obstructed bowel over an engorged ovary. Persistent obstruction of the ileocecal junction of the colon makes this point a common site of cancer and the colon proximal to it a common site of diverticulitis.

The increased blood in the obstructed bowel causes the formation of similar membranes remaining on the peritoneum where it passes from the abdominal wall to the convex surface of the bowel—immediately above the iliac crests, at the splenic flexure, below the gall bladder over the outer surface of the caecum (Jackson's membrane) and on the under surface of the terminal mesentery of the ileum (Lane's kink). These bands represent the effort of the organism to contract an abnormal kinking up of the bowel due to distal obstruction. That they are not congenital is indicated by their absence in fifty newborn fetuses examined by Chapple at Guy Hospital. The contracting appendix is another result of strain exerted by a loaded caecum, the appendix becoming fixed by adhesions to the undersurface of the mesentery. When the ileum and caecum drop into the pelvis, the ileum is kinked sharply over the fixed appendix and more or less occlusion results.

The second type of intestinal stasis is characterized by entire absence of tendency to form limiting bands and membranes. The pelvic colon becomes greatly elongated, tortuous and flaccid by reason of the attempts of the organism to expel its contents. Because of the obstruction of the lower bowel, the proximal colon becomes elongated and prolapsed so that it may twist and obstruct the end of the ileum. The latter condition may be benefited by phlegmatizing the bowel or anchoring it by Waugh's method. The retroaction to the passage of intestinal contents resulting from elongation of the pelvic colon results in colitis spastica, contraction of the muscle wall, and still further mechanical obstruction. Since there is no definite point of obstruction,

cancer does not commonly develop from this type of intestinal stasis.

The operative treatment of the first type of stasis is resection of the bands which form the first and last kink, followed by careful peritonization of all raw surfaces. Other bands, if present, should be divided. If the membrane forming the ileal kink is extensive a drainage tube is left in position because of the presence of septic organisms in the divided lymph vessels of the membrane. If diverticulitis is present, the divided end of the ileum is joined to the pelvic colon. Occasionally the diseased area is resected and the proximal bowel joined to the pelvic colon. If tuberculous ulceration is present, colectomy is performed or the ileum is joined to the pelvic colon and only the affected area is resected.

In the second type the best results are obtained by colectomy or by anastomosis of the ileum to the pelvic colon. If colitis is present it is possible to resect the valvulae or to perform colectomy. The same treatment applies to megacolon. If medical treatment fails to cure ulcerative mucous and membranous colitis, colectomy is the only operation of value. For the first condition prolonged local and vaccine treatment is necessary in addition.

GEORGE WAUGH

The colon, subject as it is to constant secretions of intestinal contents, must be perfect in its development to withstand the strain which gravity imposes upon it. Imperfect development of the colon, omentum, biliary apparatus, and small intestine must be carefully studied in order to understand and correct functional disabilities of the alimentary tract.

In children under years of age examined post mortem by Stallman at the Hospital for Sick Children, the following structural variations were found: in thirty-eight, the youngest of whom was a month old, there was a complete primary mesentery of the ascending colon; in nine, the youngest a month old, a long primitive mesentery to the iliac and pelvic colon; in fourteen, the youngest a month old, Lane's parietocolic membrane; and in forty-five a central mesentery to the gall-bladder. In one the caecum was under the liver.

In every one of 88 adults and twenty-two children operated upon since December 1919, the ascending colon had retained its primitive mesentery. In 77 cases the entire ascending colon could be lifted out of the abdomen and placed upon towels to the left of the midline; in thirty-three it was bound down strongly at the midpoint, the primitive mesocolon persisting in variable degree above and below this point. This fixation was caused by an opaque, non-vascular band passing from the antero-external surface of the ascending colon to the parietal wall. When the band was cut the cellular tissue covering the quadratus lumborum was exposed. It had no features in common with Jackson's membrane, being the structure described by Lane in 1903 as the parietocolic membrane.

In 1 case the operatrix severed the entire colon (a) in the left iliac fossa and the left side of the pelvis, and retained a primitive dorsal mesentery throughout its length. In five cases the caecum lay under the liver, in three of these the colon passed directly to the left from the caecum and the omentum arose from the entire horizontal loop. In the other two the colon dropped abruptly so that the hepatic flexure lay in the pelvis. In these five cases the terminal ileum made a steep vertical ascent to reach the caecum and was retroperitoneal in this portion of its course. In 10 cases the colon was completely rotated, but had dragged with it an opaque membrane which covered all the remaining mesenteria except the stomach.

In 18 cases the transverse colon lay at or below the sacral promontory. The degree of associated prolapse of the stomach as variable depending upon variations in attachment and the length of the omentum. Prolapse of the stomach without prolapse of the colon was never seen.

With these variations of position and mobility the colon showed atrophy and dilation which involved the ascending portion in every case; the right half of the transverse colon in ninety-eight cases, and the entire transverse colon in thirty cases. Similar changes were found in parts of the descending colon.

In 18 cases, all those of persons under 30 years of age, the entire colon was trophic and dilated from the caecum to the rectum.

In the majority of these cases the initial symptoms appeared between the ages of 18 and 25, and consisted of persistent discomfort in the upper half of the abdomen which gradually in the course of a year, merged into pain generally noted in the upper half of the abdomen, but subject to variations in distribution, confection, and character. In ninety-seven cases there was a hunger pain, which frequently could be relieved by the assumption of the horizontal position and the ingestion of food.

This fact, taken in conjunction with the fact that the hunger pain appeared constantly at 4 o'clock in the afternoon and in the early hours of the morning,

time at which the ascending colon is filled with food, suggests very strongly that the pain is caused by the downward pull of the loaded colon on its mesentery. The relief from pain afforded by fixation of the colon further confirms this view.

None of these patients had diarrhoeal attacks which could be found in operation. All had lost eight to twenty-eight cases had constipation preceded the other troubles, and in most of them its appearance was delayed for four or five years after the beginning of the trouble.

In forty cases the appendix had been removed. In five the gall bladder had been drained, and in nine a gastrojejunostomy had been performed.

The operative procedures turned out in these cases were as follows:

In all of them the ascending colon was fixed to the posterior abdominal wall in the normal position.

The trophic right half of the transverse colon was fixed by Coffey's method. In 128 the ventral mesentery of the gall bladder found in seventy-two cases was cut away; the gastrojejunostomy when was undone in six. The appendix, still present in 164 cases, was removed. In four of these it was obviously diseased. A total colectomy or a short-circuiting operation as never done. The operative mortality (including joint cases previously reported) was less than 1 per cent.

Late complications included eight cases of intestinal obstruction due to adhesions, which were observed during the past seven years. In six of these a knuckle of small bowel was adherent to the under surface of the laparotomy wound, and in two the omentum was adherent to the pelvis.

The result can be grouped roughly as failures, improvements, and apparent cures. Twenty patients report they are no better. A second group, though not entirely free from their old symptoms, have here materially benefited. Ninety-eight, after periods ranging from eight to five years, are entirely cured. The rate of improvement has been slow in some and abrupt in others.

The essential principle involved in this treatment is that in many cases functional disability of the gastro-intestinal tract is due to congenital structural defects which finally reveal their presence by failure of function. The removal of these defects and the substitution of a normal for an abnormal condition affords the essential condition for cure.

SIR H. M. W. GRAY

Since the first part of the colon sets the pace for the rest of it adhesions and bands about the caecum and ascending colon are of primary importance. That peritoneal adhesions are formed in the process of development is indicated by the work of Bryant, who found bands such as are described by Lane in all of the male fetuses and in 87.5 per cent of the female fetuses he examined.

As the caecum descends from the subhepatic region in the course of normal development, the long mesentery which the terminal ileum and ascending colon are originally provided, becomes fixed with the peritoneum of the posterior abdominal wall. In the descent of the caecum occurs the first having already taken place, any interference with the descent. The resulting abnormality—whether it is a stretched out band, Lane's terminal anal membrane, membranes reaching the antecolic border of the ileum and rotating it on its long axis, or simply a member of fibrous tags—represents the balance between the downward pull of the caecum and the tendency of the ileum to remain fixed.

The chief cause of non-descent of the caecum is involvement in an abnormally developed right margin of omentum. If the caecum overcomes the obstruction, the affected part of the omentum is drawn out into Jackson's membrane. Usually this membrane can be traced below and internal to the anterior longitudinal band. In the adult it does not

often reach the caecum. Above, it is attached to the posterior abdominal wall below the liver occasionally to the under-surface of the liver external to the gall-bladder and to the adjacent anterior abdominal wall as well. It varies greatly in obliquity, length, and thickness.

If the descent of the caecum is retarded by omental adhesions, the appendix usually comes to lie in a retrocolic or retrocecal position, external to the caecum. If the appendix lies internal to the caecum it may become involved in the obliteration of the terminal mesentery of the ileum. This is the origin of the type described by Lane as the "controlling appendix."

Gray's experience differs from that of Welch as Gray does not often discover a true ascending mesocolon, but finds that a more or less definite Jackson membrane is constantly present. The boomerang drag of the caecum and colon upon the right margin of the omentum causing a potential constriction of the pylorus and duodenum may account for the symptoms referred to the right upper quadrant in these cases.

By consistently securing an adequate exposure performing laparotomy Gray finds abnormalities in one or more parts of the colon in the majority of his cases. On the other hand, an apparently normal colon, as outlined by X-ray examination, is frequently present in patients suffering from chronic constipation. The latter is due, in Gray's opinion, to lesions of the upper part of the gastro-intestinal tract more frequently than to disease of the colon.

The symptoms ascribed by Welch to the drag of a heavily laden colon, and frequently assigned to the stomach, duodenum and gall bladder often appear within a few years after the patient has begun to lead a sedentary life. They begin with loss of tone of the abdominal muscles, which is doubtless shared by the musculature of the alimentary canal. A large number of patients with these symptoms can be helped by operation.

The conditions commonly found at operation in such cases are the absence of disease of the gall bladder, duodenum, and appendix, and the presence of peritoneal bands such as those just described, with a mobile, dilated, hypertrophied caecum and ascending colon and pathologic appendix. It is not sufficient to remove the appendix and divide the peritoneal bands. The caecum and colon must be fixed in normal position, as is advocated by Wilson in 1908. If the patient condition permits, this is now done in the course of laparotomy in every case of mobile caecum and ascending colon.

In performing this operation the filmy tissue behind the colon should be removed so that the colon may form firm adhesions to the posterior abdominal wall. The hepatic flexure should not be unduly kinked by the upper sutures. The caecum and colon are usually plicated in longitudinal direction by catching the anterior and external longitudinal bands in the fixation sutures so as to narrow the circumference of the bowel.

H. J. PATERSON

In many cases of intestinal stasis the symptoms are mainly gastric—distention flatulence prun after eating, occasional vomiting, absence of free hydrochloric acid. Relief of the stasis by a short-circuiting operation is followed by symptomatic improvement and the return of the secretion of free hydrochloric acid.

The charcoal test is of value in determining high cases of intestinal stasis should be operated upon. In the absence of definite evidence of a kink or a diseased appendix, operation is not indicated unless the appearance of charcoal taken by mouth is delayed for four days. Deductions drawn from roentgenological and bacteriological examinations should not be allowed to outweigh the evidence afforded by this simple clinical determination.

If there is definite evidence of kinks or obstruction surgical treatment is indicated, but if the stasis is due to atony of the large bowel or the presence of large mobile caecum it can usually be corrected by medical and mechanical treatment. The division of bands is a satisfactory operation unless the bands are very extensive. In the latter case, because of the danger of postoperative ileus, colonic exclusion is preferable. Ileocolic anastomosis is an unsatisfactory operation because of the accumulation of feces in the inactive transverse and ascending colon. In twenty of forty-one cases it was necessary to perform a second operation to remove the colon above the ileocolic anastomosis. The results of partial colectomy as far as the relief of symptoms is concerned, are excellent, but in six of thirty-seven cases a second operation was necessary later for the relief of intestinal obstruction. Paterson has never performed a primary colectomy but of the twenty patients on whom colectomy was performed secondary to ileocolic anastomosis six developed intestinal obstruction. Because of the danger of this complication, total colectomy is contra-indicated in the treatment of intestinal stasis. With regard to the value of fixation of the ascending colon Paterson is skeptical.

The operation of colonic exclusion is performed as follows:

The ileum is crushed and divided with the cautery 4 to 6 in. from the ileocecal valve and the ligated distal end inverted with a purse-string suture. The proximal ileum is then joined to the side of the sigmoid, and the stump of ileum distal to the anastomosis is inverted so as not to leave a blind pouch. The sigmoid is divided in the same way 7 in. above the anastomosis. The closed tube left behind, consisting of the caecum and the ascending, transverse and descending colon, is drained by bringing the appendix or caecum to the abdominal wall and tying a large catheter in the caecum.

Of nineteen cases in which this operation was performed the results were excellent in sixteen. One patient died sixteen days after the operation from suppuration in the right iliac fossa, one died eighteen months after the operation from perfora-

tion of a tension ulcer and one has had attack of pain from time to time due to distention of the caecum with gas.

The operation has all the advantages of colectomy without the danger of later intestinal obstruction.

A. J. WALTON

Hinks and blind are not so common as has been suggested. They are usually congenital and may be found in very young children. Symptoms of chronic toxæmia appear chiefly in women but the hinks and membrane described are equally common in males and females. Phlebotomy does not necessarily arrest it in many women who have had frequent pregnancies and the more profound degree of phlebotomy does not have symptoms of toxæmia. The explanation of the increasing frequency of ceratophony in young women today may lie in the lack of development of the involuntary muscles.

Stasis: medical disease. Operation should be performed only if medical treatment has failed. Local reliefs are only a cry. In advanced cases stasis is not relieved by removal of the appendix or by fixation of the caecum. See also L. KNOTT M.D.

Richter, J. Atypical Operations—Especially Half Subtotal Stipulation (Excision of the Tip of the Appendix—in Cases of Severe Adhesions Due to Appendicitis) (Leber, J. u. Nieren Operationen, Inwiderstand gegen Fall von der Starker Leber (A. u. Nieren) der Paracystitis mit einem sehr schweren Adhäsionsfall nach einer Appendicitis). Deutsche Zeitschrift für Chirurgie 9, 1, 4.

In a case of severe extraintestinal adhesions between the appendix and small intestine and between the small intestine and pelvis, the thoracic distended nearly complete separation of the appendix from the isolated adhesions in second operation. As further separation toward the tip is impossible because of the fixation of the small intestine, the tip was left adherent to the small intestine, bound bloodily to its proximal end and with the starbed wall of small intestine invaginated into the lumen of the gut. The feces evacuated from the appendix were removed and the tamponade of the incision removed.

Although there has been much criticism of Holsma's procedure in which, in severe cases of adhesions, the entire appendix, after being excluded, left in the abdominal cavity, the caecum and proximal end of the appendix being covered by omentum, Richter believes his technique. He is contented only as a last resort after other measures have failed, offers relatively good protection from recurrence. (Holsma, 17)

Carter, R. F.: The Pre-Operative and Postoperative (The Treatment for Colon Malignancy). J. u. Nieren Operationen 9, 2, 110.

Cooperation of the surgeon, the internist, the bacteriologist and the physiologist is essential for success in operation on the colon for malignancy.

Complete obstruction of the colon by a growth must be relieved at once by operation, regardless of

the patient's general condition. A growth at the ileocecal junction may cause symptoms of obstruction early but a growth in the right half of the large bowel may attain considerable size and form metastases before it produces symptoms, hence in the treatment of this part of the colon as liquid or semisolid Cathartid and irrigation will clear the large bowel sufficiently for one stage operation.

Clearing of the bowel proximal to growth in the left half of the colon is much more difficult problem and can be accomplished only by establishing an artificial anus proximal to the growth for external drainage and irrigation. As the forces of the bowel increase, the flow of content becomes increased, the absorption of the liquid becomes greater and hard masses of feces are formed which will not pass the obstruction and result in forms of purgation. The complete removal of these anahals and the cleansing of the colon of septic material is the most important step in the preparation for removal of the growth.

This should never be drastic and should never precede preliminary operation in the presence of partial obstruction or attempted during the last thirty to forty hours before operation. It tends to produce spasm of the colon during the operation, painful contraction afterward, and dehydration.

The portion of the bowel distal to the growth is best cleaned by injecting 6 to 8 oz of oil followed in eight hours by soap and enemas given until the return is clear. A sodium bicarbonate enema is then given on repeated daily until four hours prior to the operation.

In normal colon the influence of the bacteria dominates; the contents become more solid. In the presence of an obstructing growth the culture of the colon proximal to the growth becomes favorable breeding ground for anaerobic bacteria. Drainage of the colon proximal to the growth is therefore essential to clear the segment of the bowel contents. If this cannot be accomplished through the rectum, an artificial anus should be established.

After the operation a quart of morphine followed by 30 gr. of morphine every four to eight hours will control the pain. Continued colicky pain after this, which is not relieved by the colon tube, strongly suggests intestinal obstruction. Evidence of the anastomosis of normal bowel may sometimes cause sufficient stenosis to produce partial obstruction. This should disappear in forty-eight hours. If the proximal colon had been distended, external drainage through gastrostomy or enterostomy opening is indicated at the time the resection is done.

In ascending retroperitoneal collection causes no pain, but pain in the second or third day after the operation suggests wound infection and clipping, stitch or the all get usual relief of partial excoriation may be relieved by the application of petrolatum to the wound area.

The administration of fluid is the most important postoperative consideration and should be begun immediately following operation by hypodermoclysis.

as with a 3 per cent glucose solution given under the breast or in the flank. It may thus be given slowly over a long period of time. Four ounces of fluid may be injected into the rectum with safety every four hours if the injection is preceded by the passage of a colon tube. Glucose and sodium bicarbonate should not be given intravenously unless a chemical analysis of the blood is first made. When a blood analysis is not made, normal saline should be used.

Occurring after ten hours is due to acute dilatation of the stomach (which is rare) neurosis, acidosis, or peritoneal peritonitis. Specific treatment for the colic will clear it up quickly. In other cases gastric lavage will give relief. PAUL W. SKEET, M.D.

Collins, F. H. Aseptic Resection of the Intestine. *Ann. Surg.* 1922, Vol. 75, 9.

The method described for aseptic resection of the intestine is a method of end-to-end anastomosis and immediate restoration of the intestinal lumen by the use of a removable looped ligature. The operation is a modification of a procedure devised by Halsted which consisted of a blind-end circular suture of the intestines with the closed ends abutted and puncture of the intervening diaphragm by means of a knife introduced through the rectum. H. W. FINE, M.D.

Horne, C. F. Aseptic Technique for Resection of the Intestine. *Ann. Surg.* 9, Vol. 74, 5.

In the author's method of resecting the intestine especially the portions of the gut proximal and distal to the portion to be removed are isolated by means of a pursestring suture of heavy silk or linen thread. The suture is begun at point distal to the mesentery so that when it is tied the knot will be above, facing the operator. All coats of the intestine except the mucosa coat are included. A clamp is then placed between the two pursestring sutures on each end of the intestine to be resected. The mesentery is dealt with in the usual way and the segment of gut is removed by dividing it between the clamp and suture with the electric cautery. Before the pursestring suture is completed two release strings free the ends as placed between the two knots so that they may release the purse string at later stage of the operation.

The proximal and distal stumps are then brought but apposition and joined by interrupted mattress sutures of intestinal silk. The release strings are carried out between the mattress sutures, and as the two ends are approximated they are released until a communication of the canal being thus established after the two ends have been sealed by the mattress sutures. The pursestring, which has thus been opened remains in the gut lumen and is carried through the bowel to pass out with the contents of the gut.

This operation has been performed on ten dogs and two patients.

The article contains numerous illustrations.

H. W. FINE, M.D.

M. J. J. R. Involvement of the Lymph Nodes in Carcinoma of the Rectum. *Ann. Surg.* 9, 2, Vol. 75.

Rectal carcinoma is one of the most common intestinal neoplasms and constitutes 4 per cent of all cancers. The majority of patients are in the sixth decade of life. The incidence of the condition is slightly greater in males than in females. The duration of the symptoms is usually less than one year. The location of the growth on the rectal wall varies, but the anterior and posterior walls are involved with about equal frequency. The greater number of the growths are found between the ampulla and the rectosigmoid junction. Adenocarcinoma is the most common type of growth. Metastases to the glands usually takes place slowly. The liver is the organ most often affected by secondary growths. The other organs of the body are only rarely affected.

The size of the growth in the rectum cannot be relied on as an accurate index of the probable lymphatic involvement. The neoplasms without lymphatic involvement tend to grow into the lumen of the bowel, while those with slight lymphatic involvement tend to spread by direct extension and grow slowly. Carcinomata of the rectum with extensive involvement of the lymph glands tend to metastasize through the lymph stream early. Occasionally metastases may be formed by emboli breaking off into the portal sinus.

Metastatic involvement of the lymph glands can be definitely determined only by systematic microscopic study of all the regional lymph nodes. The size of the lymph nodes is not an accurate index of metastatic involvement. This is especially true if the involvement is slight or the process is in the early stages.

In carcinoma of the rectum, as in cancer of the stomach, systematic microscopic examination of all the regional lymph nodes is the best method of establishing an accurate prognosis.

One hundred specimens which had been removed at operation at the May Chancé were studied. Six hundred and twenty-three glands were obtained from these specimens. In 53 per cent of the specimens there was no glandular involvement. In 30 per cent slight glandular involvement and in 17 per cent, marked involvement of the glands.

Quinland, W. B. Congenital Malformation of the Intestine—Atresia and Imperforate Anus. *Boston M. & S. J.* 1922, Clinica, 870.

Quinland reports and analyzes twenty-seven cases of congenital malformation of the intestine, most of them unpublished cases from the Anatomical Museum of the Harvard Medical School.

Imperforate anus, the most common intestinal anomaly, is due to imperfect union between the rectum above and the posterior part of the cloaca common to the urogenital aperture and hindgut below. The anal aperture may be separated from the rectum by mesodermal tissue an inch or more in

depth as the result of insufficient invagination of the ectoderm to meet the rectum which may end blindly above or communicate with the exterior by some natural opening.

In another type, the embryonic anal pit persists without the slightest invagination of the skin in this region.

In cases of incomplete separation of the cloaca to form the urogenital sinus and rectum, the rectum opens into the bladder or more commonly in males, into the prostatic or membranous urethra. These cases are frequently unrecognized. More unusual openings of the rectum have been recorded. In one case the intestine was directed upward and opened under the border of the right scapula. In another it descended from the pelvis through the chest and neck and opened on the face.

Of the various hypotheses as to the cause of these the theory most commonly accepted is that advanced by Taubler. In the embryo of 7 mm the gut is divided into compartments by septa of proliferating lining epithelium so that in the embryo of about 14 mm the lumen may be completely occluded. In the embryo of 30 mm the compartments begin to become confluent, and in this way central lumen is re-established. When some of the septa fail to disappear a more or less complete occlusion of the gut persists.

There may be many forms of this defect resulting in blind ends not attached to each other or attached by strands of serous, muscular, and submucosa, or small epithelial tags joining the blind ends. In some cases a malformation which is originally stenotic develops into stricture, a change which accounts for the fact that meconium is sometimes found distal to the stricture. Atresia of the intestine may occur in any portion of the intestinal tract, but its most common location is the duodenum and the jejunoileal regions. This is probably one of the rare forms of congenital malformation.

The prognosis is grave on account of the complications, viz. hemorrhage, peritonitis, and septicemia.

Because of the probability of an ascending peritonitis, it is usually wise in cases of imperforate anus in which there is connection between the lower end of the rectum and the bladder to restrict operative measures to permanent colostomy rather than to attempt to separate the rectum and bladder. If the child is female, the prognosis is more favorable, especially if the rectovaginal opening is of fairly large size. If the occlusion is high up in the small intestine death usually occurs in five or six days.

The treatment is surgical and must be adapted to the requirements of the particular case. The perineal approach is sometimes futile because, as the incision must be relatively short, it is difficult for the surgeon to explore the deeper perineal structures and find the rectum which may terminate high in the pelvis. In such event, enterostomy is necessary.

O. S. PACCOR, M.D.

LIVER, GALL-BLADDER, PANCREAS, AND SPLEEN

Gordon, J. K. Congenital Obliteration of the Bile Ducts and Congenital Biliary Cirrhosis of the Liver. *Boston M & S J* 9 (October, 1913).

From a review of the literature Gordon draws the following conclusions:

Mild or severe cirrhosis of the liver is found with congenital obliteration of the bile ducts.

A congenital biliary cirrhosis of the liver may occur without congenital obliteration of the bile ducts and is not a result of the latter condition.

In view of the otherwise hopeless outlook, surgical interference is advisable in all cases in which positive diagnosis of congenital obliteration of the bile duct has been made.

H. A. McKENZIE, M.D.

Geepel, K. Can the Kehr Drainage of the Hepatic Duct Be Replaced by a More Complete Procedure? The "Ideal Cholelithotomy" (Lumbarische Hepaticodrainage durch ein offenes Leberstrichfistulchen ersetzt werden. Die ideale Cholelithotomie?) *Munchener med Wochenschr* 1922, 102, 44.

The author discusses the deficiencies of Kehr drainage of the hepatic duct. The measures so far suggested to overcome the difficulties have been unsuccessful because drainage to the surface of the body is based on false principles. Drainage should occur into the duodenum, such as physiologically adapted to receive the bile and this is possible only when there is permanent side connection between the common bile duct and the duodenum.

Slitting of the common bile duct beginning at the duodenum gives good results in cases of edema, calculi and should be done instead of drainage of the hepatic duct in cholangitis and cases of biliary colic and stones in the common bile duct when there is the slightest possibility that stones or stone fragments may be left behind. It is indicated also in cases of dilation of the common bile duct without stone (papillitis, pancreatitis).

Another procedure of value is the formation of an anastomosis as thick as lead pencil between the common bile duct in the duodenum in the acute angle here the common bile duct joins the duodenum. It is indicated less in cholelithiasis, however, than in chronic biliary stasis due to tumor of the papilla or induration of the pancreas. The author discusses the technique and the advantages of the procedure briefly.

PYLARKIN (2)

Leichtenstern, E. The Relationship of Surgery to the Diseases of the Hepatobiliary System (Die Beziehungen der Chirurgie zu den hepatobiliären Systemerkrankungen) *Zentral f. d. med. Fortbild* 9 2, 27, 32.

General anesthesia should be avoided in diseases of the hepatobiliary system as chloroform has a very toxic effect on the liver and large amounts of

have also proved injurious. Operative procedures in such cases should be carried out under anesthesia combined with twilight sleep. The disease of the hepatobiliary system are not also to hemorrhage during, and particularly during operation.

The surgical treatment of diseases of the liver is directed to the treatment of cirrhosis by the Talma operation. In diseases of the spleen, the conditions are favorable as the spleen may be extirpated. In mucous anemias, extirpation of the spleen does give a permanent result but is indicated as a last measure. Bant's disease and familial cholemic icterus are apparently cured by splenectomy. In two of the author's cases of pseudoleukemic anemias in infants splenectomy was followed by good results. Splenectomy is not indicated in anemia.

The author reports a case of Bant's disease in which he operated in the first stage, the blood picture and the general condition were considerably improved by the operation.

KRUM (Z)

Case, F. A Case of Torsion of the Gall Bladder (Ein Fall von Gallenblasentorsion). *G. H. Z.* 9, 1904, 454.

The patient, a woman 7 years old, died with the symptoms of hemorrhagic colitis. When the abdominal cavity was opened, a rotatory, markedly enlarged gall bladder was found with a pedicle which was situated at the junction of its middle and lateral thirds. The gall bladder was twisted around the pedicle and as necrotic. Surrounding the gall bladder was a circumscribed zone of peritonitis. One week old, and around the liver, duodenum, gall bladder a proliferation of connective tissue to chronic inflammation. Peritoneal reduplications stretched between the duodenum, liver and gall bladder. The transverse colon and the sigmoid had a strikingly long mesocolon. The latter may have been congenital anomaly. The colon showed hemorrhagic colitis which had been present for 3 weeks. Ten days before death this condition became aggravated and there was severe abdominal pain which probably was due to the torsion of the gall bladder. The condition was not diagnosed before autopsy.

VON LO WAYER (Z)

Case, F. The Ascaris Lumbricoides in the Biliary Tract (Der Spulwurm in den Gallenwegen). *Med. Klin.* 9, xviii, 7.

The author states that the presence of ascariades in the biliary tract is by no means rare and that since the World War reports of such cases have become more numerous.

A case is reported in which incarceration of gall stone was suspected because of pain under the right costal arch but operation an ascaris was found in the common bile duct and no stone.

The most important complications are obstruction of the common bile duct, cholangitis, and ptotic become. Franke concludes that in every

case of disease of the biliary tract a search should be made for the worm and its ova. In the presence of complications immediate operation is indicated.

SONNEN (Z)

Corkery, J. R. Chronic Catarrhal Cholecystitis with Lipoid Deposit. *A. Surg.* 9, 1904, 736.

Papillomata of the gall bladder occur as single or multiple lesions of the mucosa. They appear as white or yellowish bunches of grape-like bodies from 0.5 to 5 mm. in diameter insecurely attached to the mucosa by a very slender filament of tissue. The cellular changes are identical with those found in chronic catarrhal cholecystitis with lipoid deposit, namely fish scale and strawberry gall bladder. The lipoid substance is seen in large polygonal cells or round cells in the submucosa and in the walls and lumina of blood vessels. It is usually deposited in the form of fine granules. Round cell infiltration is noted in amounts proportional to the amount of lipoid deposited. The picture is that of an acute infection engrafted upon chronic infection. Every case shows fibrosis, especially about the villi. The villi become broader at the base, shorter in the long axis, and enlarged at the tip so that they are almost spherical. In the formation of a papilloma the base of the villus becomes narrowed to a slender filament, change which tends to cut off the blood supply and therefore favors necrosis and exfoliation of the papilloma. The only apparent difference between strawberry and fish-scale papillomas of the gall bladder is the shape of the yellowish white masses.

The clinical history, the surgical findings, and the postoperative results in cases of papillomata are indistinguishable from those of strawberry gall-bladder and fish scale gall bladder. The author believes that papilloma is not neoplasm but the result of chronic cholecystitis. The scarring and irritation and the resultant changes in the mucosa of the gall-bladder cause first a strawberry appearance then a fish-scale appearance, and finally a papilloma appearance of the gall bladder. A gall bladder which is chronically inflamed may show one or all three of these pictures at different times in the course of the disease.

H. W. FISK, M.D.

Leske, N. D. C., and Kivinen, P. A. A Contribution to the Study of Connective-Tissue Changes in the Gall-Bladder. *V. Läk. M. J. & Med. Rev.* 9, 1904, 640.

This article is the report of a case of cholelithiasis in an insane woman 48 years of age. The walls of the gall-bladder showed extensive connective-tissue changes. Mitotic figures were not numerous but there were areas in which mitosis was an outstanding feature.

There was no metastasis, and the infiltration was limited to the surrounding structures, the liver and the cystic and common ducts. The authors hesitated to diagnose the condition as sarcoma although they felt that they might be dealing with growth close

resembling myxosarcoma which usually shows less tendency to metastasize than many of the other forms of malignancy
 Part W. SARTER, M.D.

McClure, G. W. and Jones, C. M. Studies in Pancreatic Function. *Review of 5 J*
 12, 111, 009

Abnormalities in the enzymatic action of the duodenal contents were found by the authors in cases with an organic lesion involving the pancreas primary or secondarily and in cases in which the clinical, operative or autopsy findings indicated derangement of the external secretory function of the pancreas. From this fact it seems fair to assume that such abnormalities show pathological involvement of the pancreas or its ducts, and that the involvement of the pancreas may be mechanical or functional. It is therefore justifiable to conclude that the enzymatic action of the duodenal contents indicates the activity of the external secretory function of the pancreas.

In achylia gastrica and pernicious anemia no abnormalities in the activity of the external secretory function of the pancreas as measured by the enzyme concentration of the duodenal contents are demonstrable. These findings suggest that the presence of hydrochloric acid is not necessary for the stimulation of normal pancreatic secretion.

The external secretory function of the pancreas was found much depressed in chronic pancreatitis.

Acute pancreatic necrosis, cancer of the head of the pancreas, and leukos obstructing the pancreatic duct were accompanied by marked abnormalities in the enzymatic action of the duodenal contents (Mucous leukos caused marked decrease while acute necrosis usually caused discontinuity).

The estimation of the enzymatic action of the duodenal contents furnished findings of value in the differential diagnosis between benign and malignant lesions causing obstructive jaundice.

Acute and chronic biliary stasis and infectious jaundice are accompanied by diminution of enzymatic action of the duodenal contents.

The method used by the authors to test the duodenal contents was as follows:

A duodenal tube as allowed to enter the second portion of the duodenum its position being verified by fluoroscopy. The patient is then given a ccm of 20 per cent cream in which 5 gm of barium sulphate are suspended. A soon as the flow had begun in the tube the duodenal contents were withdrawn off and collected for one hour. After the barium appeared proteolytic activity is estimated by allowing dilution of the duodenal content to act on solutions of soluble casein. Amylolytic activity was estimated from the number of milligrams of glucose developed by the action of the duodenal contents on a solution of soluble starch. Lipolytic activity is estimated by allowing the duodenal contents to act on true emulsion of cottonseed oil, and determining the amount of

acidity developed by titrating with tenth normal alcoholic solution of sodium hydroxide.
 H. A. McCLURE, M.D.

Bourman, H. A. H. A Pancreatic Cyst in the Left Hypochondrium Extirpated. *Urologic Med*
 9, 697

Bourman presents the history of a case in which pancreatic cyst was successfully removed from a 27 years of age.

The typical case is that of an adult, he has sustained a violent blow on the upper part of the abdomen causing signs of shock. After a trile period of time globular and fluctuating tumor becomes apparent in the epigastrium. This is separated from the liver by none of the many difficult to differentiate from splenic dullness. Irritation of the stomach and vomiting manifest in reversible acid in demonstrating that the growth is behind the stomach.

In many cases there is history of loss of weight, increasing weakness, anorexia, colic, disturbances of digestion and nutrition, and constipation. In addition there may be polyuria, glycosuria, or the presence of fat and undigested muscle fiber in the stool. In some cases the tumor may disappear or diminish in size and then grow again. As a rule the symptoms increase after the ingestion of food. The pancreatic cyst is the most painful of all the abdominal cysts. The use of the exploring needle in the diagnosis has been abandoned.

The ideal method of treatment is extirpation. When this seems impossible manipulation (the sewing of the cyst all to the skin and drainage of its contents) may be tried. E. C. ROSEMARY, M.D.

Lownard, F., and Debaucher, H. Encysted Hamatomas of the Spleen (Les hamatomes enkystés de la rate). *J. de chir.* 9, 27, 464

In the spleen, non-parasitic cysts containing blood may be observed sometimes with a distinct wall and sometimes without. The first or true cysts which are extremely rare and of obscure pathogenesis. The second type appear to be encysted hamatomas. The majority of the latter are due to traumatic rupture of the spleen, but large number are formed by spontaneous hemorrhage not caused by external violence. The authors report case of this type. The patient had history of malaria and enlarged spleen since infancy and the appearance of the cyst as preceded by sudden removal of the malarial infection. At operation an encysted hematoma was found. Macroscopic and microscopic examination showed that its contents consisted of pure blood in different stages of decomposition. On histologic examination it was found that the cysts all lacked cellular lining and as formed of connective tissue such as apparently the product of inflammatory reaction.

Lownard collected eighty six cases of non-parasitic cysts of the spleen, of which forty-one appeared to be of the second type described. The authors have discovered seventeen others, including

their own. The patient almost always gives a history of chronic malaria and only exceptionally mentions any other infection. Whatever the origin a subcapsular or pericapsular collection may become encysted, rapidly increase, and rupture or become infected. The intense associated inflammatory reaction may extend and both the cyst and the spleen may become strongly fixed to the anterior and posterior abdominal walls and diaphragm by adhesions. The evolution of a blood cyst is always more rapid than that of a hydatid cyst.

When the spleen is adherent and fixed to the abdominal wall and diaphragm by old fibrous ad-

hesions the difficulties are so great that splenectomy cannot be attempted.

In the case reported by the authors hemorrhage was obtained by ligation of the pedicle. The capsule was then incised, the pulp separated by burrowing beneath it with the finger and the whole organ decorticated. There was no hemorrhage. Postoperative bleeding was insignificant, tamponade being done only as a precaution.

The authors have been unable to find a report of previous use of this method of subcapsular or subserous decortication of the spleen.

W. A. BREN A

SURGERY OF THE EXTREMITIES

CONDITIONS OF THE BONES, JOINTS, MUSCLES, TENDONS, ETC.

Ledderhose, G. The Chronic Diseases of the Joints Other Than Mycotic and Neuropathic Conditions (Die chronischen Gelenkerkrankungen mit Ausschluß der mykotischen und neuropathischen Formen). *Festschr. d. Chir. Orthop.* 9, xv, 204.

Chronic diseases of the joints are classified according to their clinical symptoms as arthritis deformans, chronic progressive polyarthritis, and chronic articular rheumatism.

One of the chief characteristics of arthritis deformans is its very insidious and slow course. Each permits functional adjustment such as is not observed in any other similar condition. Arthritis deformans occurs more frequently in males than in females and usually develops in an advanced age. An important difference between this condition and other chronic joint diseases closely resembling it, such as primary progressive polyarthritis, is the fact that as a rule it attacks the larger joints, particularly the knee joint. It first causes motor disturbances in the joint, but as in the beginning these are not associated with pain they are often discovered only on physical examination. Joint crepitation is an early sign. Palpation reveals swelling on an irregular surface and, particularly, prominence of the edges of the joint all of which become more noticeable with the advance of the disease. In contrast to tuberculous and chronic progressive polyarthritis the associated muscle atrophy in arthritis deformans is usually not very marked, and bone atrophy is either absent entirely or very slight. Friction on the primarily degenerated cartilaginous covering of the joint ends results in exuberance of the exposed bone and cartilaginous and bony proliferations of the cartilage bone borders. In many cases loose bodies are broken off.

With regard to the etiology of the condition Ledderhose states that if the theory that arthritis deformans is a general disease is correct, the experimental injury of animal joints or static disturb-

ances within human joints cannot produce this condition.

The analogy between arthritis deformans, gout, and joint diseases with alkapturia, and our knowledge regarding the etiology of chronic infectious and mycotic diseases of the joints make it appear to Ledderhose as exceedingly probable that in the final analyses the abnormal or abnormally behaving metabolic products—the expression of the arthritic predisposition—are responsible for the primary injury of the joint cartilage.

In the advanced stages of arthritis deformans of the shoulder joint the capsule is widened and destroyed. The long tendon of the external head of the biceps, which runs through the joint, is involved early, becoming stretched, displaced, or ruptured, changes which find their expression in the spherical form and the slipping downward of the external head of the biceps. Ledderhose has shown that the change in the shape of the muscle which was formerly regarded as due to traumatic rupture of the biceps is a sign of arthritis deformans.

The author discusses the effect of the disease also on other joints and its relation to injuries and inflammation of the palmar fascia (Dupuytren contracture).

On the whole the prognosis is unfavorable. Although there may be prolonged quiescence of the disease and improvement in the symptoms, the condition is progressive and incurable. If the chronic ankylosing disease of the vertebral column the shape of the vertebrae is a decisive sign in the differential diagnosis. In spondylitis deformans the vertebrae show marked changes, while the lateral articulations, which are the chief localization of the ankylosing disease, are seldom involved. Ankylosing spondylitis is not curable; therefore only symptomatic treatment comes up for consideration.

The other conditions discussed are osteochondritis deformans, coracoclavicular, chronic progressive destructive polyarthritis, chronic articular rheumatism, chronic diseases of the joints occurring in infancy and chronic diseases of the joints associated with alkapturia, porphria, or hemophilia.

VALERIO (Z)

and gives good results in only about 15 per cent of persons of middle age. In the latter group this method may be tried first and open operation performed later if the results are unsuccessful, but such procedure is associated with loss of several months of time and shortening of the limb. In case thus treated the leg is adducted and short and no pain persisted after the open operation performed by the author. This case is contrasted with another treated by immediate operation which Wilensky regards as the method of choice.

The immediate operation on an incision is made over the great trochanter and traction is applied to the limb by means of the H key table. A hole is then drilled from the base of the trochanter through the neck and into the head and an autogenous bone peg taken by chisel and mallet from the outer aspect of the femur preventing the wound is driven in and chiseled flush. A plaster bandage is then applied with the limb in abduction and left in place for two months. During the third month massage and passive motion are instituted with the patient in bed. During the fourth and fifth months the patient is allowed to walk with the aid of splint. At the end of six months the support is removed.

In the case reported excellent anatomic and functional results were obtained with no shortening and practically full motion.

D. R. TILLEY, M.D.

Palmer, C. F. Injuries to the Crucial Ligaments and Avulsion of the Tibial Spine. *British Medical Journal* 1924, 2, 103.

In the author's opinion rupture of the crucial ligaments is not as serious as was formerly believed as very good function may be expected after union of this injury and the operative treatment is associated with very little risk. The majority of cases the conditions call for tunneling operations and transference of muscles or transplants of fascia. The crucial ligament may be repaired or bridged through median incision in the patella. Protection with a cast splint for several months after healing is begun should be insisted upon.

Avulsion of the tibial spine should be treated conservatively by the application of cast with the leg in extension.

The comparatively good function which frequently follows rupture of the crucial ligaments is explained by the fact that as a rule the contour of the articular surfaces of the femur and tibia is not changed.

When a person with arthritis lies in bed for long time with his legs in slight flexion or complete extension the condyles become squarish and the tibia subluxated to such extent that he is completely incapacitated even before the cartilage has become eroded or the capsule or ligaments greatly changed. If such osseous distortion can be prevented the prognosis as regard function in the knee joint is very favorable.

THOMAS LAWRY, M.D.

Moore B. H. Subastragalar Dislocation of the Foot. *Surg. Gynec. & Obst.* 1924, 38, 122.

Subastragalar dislocation of the foot, in which the os calcis and the scaphoid are displaced from the astragalus, is a rare injury. Its causes are usually a fall from a height in which the weight of the body is received on the adducted or abducted foot, or violent blow on either side of the lower part of the leg. The dislocation may be lateral, medial, backward, or forward. When it is outward, the astragalus sinks down as the result of weight bearing, the foot becomes everted and abducted, and the head of the astragalus becomes prominent on the inner side. When the dislocation is outward, the interosseous ligament is ruptured between the astragalus and the os calcis, and the astragalocalcaneal ligament and portions of the distal ligament are torn.

The treatment consists in primary reduction when possible, the method depending upon the type of the dislocation and being based on the principle of reversal of the force which caused the dislocation. For old dislocations in which reduction is impossible astragalectomy is the method of choice.

FRANK M. LARSEN, M.D.

Wiedleder A. A Case of Breaking Off of the Tibial Calcaneal (Tuber eines Fall von Abbruch des Tuber calcanei). *Wien. Klin. Wochenschr.* 1924, 37, 636.

The author reports a case of valsalva fracture of the tuberosity of the os calcis in which there was dislocation in the longitudinal axis, its distortion and rotation of the proximal fragment about 90 degrees. The broken off fragment was immediately replaced by open operation as perforation of the skin threatened. It was possible to approximate the bones by marked plantar flexion and to fill them with strong silk sutures (plantar fascia, the peroneus and the insertion of the Achilles tendon). A plaster cast was applied in the pointed toe position.

The wound healed by primary intention and the roentgenogram showed good callosus union. The after treatment included active and passive motion, brine and massage. Function is almost normal, but prolonged walking caused great fatigue and pain. The patient could not follow his calling (carpenter) completely after five months. Serch injuries often produce long continued disturbances.

These fractures may be due to indirect causes (such as tension of the musculature of the calf and falling on the foot in the position of marked plantar flexion) and to the direct effect of force against the tuberosity of the os calcis. Zur Verth does not recognize avulsion fractures in this region but speaks of compression fractures with or without destruction of the framework of the foot (the investigations of Tuxen and Hennings showed that the Achilles tendon is not inserted into the upper posterior border of the os calcis). During the World War Zur Verth observed fractures of the tuberosity of the os

calds due to a force from below rather than to contraction of the Achilles tendon. H. claims that there is also a longitudinal compression as the tuberosity is released from ligaments under tension.

The author believes that in his own cases direct force was responsible, the foot being wedged and the body sinking to one side so that the fragment was twisted.

The treatment is usually conservative, consisting of the application of a plaster cast with the foot in plantar flexion and the knee bent. The author recommends tenotomy to eliminate the tension of the muscles and to avoid the long continued pointed foot fixation otherwise necessary. ZIVKIN (Z)

SURGERY OF THE BONES, JOINTS, MUSCLES, TENDONS, ETC.

Henderson, M. S. Surgery in Infantile Paralysis. *Minnesota Med.* 9 706

After passing briefly over the treatment of infantile paralysis in the acute stage and the period of recovery the author discusses the various operations of value in the stage of residual paralysis. During the period of recovery there may be deformities due to improper muscle balance after partial paralysis and the deformation of gravity which proper splinting would have prevented.

Emphasis is placed on the proper selection of cases for surgery. The case should be studied as a whole, and special attention should be paid to the gait. The patient or his parents should have a clear understanding of just what is and what is not to be expected from a certain operation. Of 74 cases treated conservatively at the St. Louis Clinic 5 per cent were subjected to surgery.

Manipulation, tenotomy, osteotomy, arthrodesis, tendon plastics, tenodesis, and astragalectomy are considered in turn. In the contractures of deltoid paralysis, mild hip or knee flexion and mild equinovarus much can be accomplished by manipulation alone either by the daily application of moderate force, the position gained being held by suitable splint, or by forcible correction under anesthesia. In straightening the knee care must be taken to prevent subluxation. Tenotomy is indicated only when nothing further can be accomplished by manipulation. In talipes equinovarus, if the tendon of Achilles is cut before manipulation the fulcrum action is lost, and it is difficult to correct the arm. Frequently section of the plantar fascia is necessary.

Osteotomy is next considered. In cases of deformed feet after manipulation and tenotomy osteotomy through the tarsal bones is often necessary. In characteristic deformity of distal lower extremity with some power in the hamstrings and extensor fasciae femoris, the thigh is flexed and abducted and the knee is flexed and possibly subluxated outward and rotation of the leg below the knee. After the hip and knee have been straight-

ened there is often a knock-knee and an everted foot, the latter due to the rotated tibia. An osteotomy through the lower end of the femur and another through the upper third of the tibia, and possibly the fibula, may be necessary to correct the two deformities. Correcting the line of weight-bearing restores function in a surprising manner for weak muscles are placed by the correction in a more favorable position for work. It is well known that a limb without paralysis tires very easily when the weight-bearing line is faulty.

Arthrodesis should be used to increase function and give stability to the lower extremity and to increase function in the upper extremity. Arthrodesis in the lower extremity should be used only when the extremity below the joint to be fixed is capable of being made to bear weight or in other words, when the fixed joint can be used to advantage. Some persons may prefer to use a brace rather than to have a stiff knee. Astragalectomy is usually preferable to arthrodesis in the ankle joint. As all lateral mobility occurs below the astragalus, astragalocalcaneal arthrodesis is sometimes of value in stabilizing the foot. Astragalocalcaneal arthrodesis may be used to overcome a tendency to eversion in the forepart of the foot. Arthrodesis is of value in the shoulder joint only when the scapular muscles are intact even when the elbow cannot be voluntarily moved, for when the arm is raised from the side, gravity will bring the hand to the head. If the hand is paralyzed, arthrodesis is contraindicated. The elbow may be arthrodesed in the position of extension, but the patients get along so well as they are that they do not often choose arthrodesis.

Better results than heretofore are now being obtained in tendon plastics because of better selection of the cases and better understanding of the limitations of operations on the tendons. In the foot of a patient with paralyzed tibialis anticus and strong peroneals, one of the peroneals may be transferred to the tibialis anticus. If the peroneal group is paralyzed and the tibialis anticus is strong, the tibialis anticus may be transferred to the cuboid bone on the outer side of the foot. Transfer of the peroneals to the tendon of Achilles for talipes calcaneus and transfer of the extensor longus hallucis to the front part of the foot for toe drop have been disappointing in the author's experience. Failure is certain if weak muscle is transferred to replace strong one.

Transfer of the biceps femoris occasionally to the semitendinosus to the patella when the quadriceps extensor is paralyzed is very satisfactory as it gives stability to the knee even though the patient is not able to extend the knee fully. Opportunity for tendon transference in the upper extremity is rare, at least in infantile paralysis.

By tenodesis it is possible to prevent foot-drop by fixing the distal parts of the paralyzed extensors of the toes and the tibialis anticus into the tibia. It is possible also to prevent calcaneal deformity by implanting the tendon of Achilles into the tibia. The use of tenodesis has been disappointing in the

author's experience because the tendons have so often slipped at the new insertion to the bone.

Astraglectomy with posterior displacement of the foot is indicated chiefly in calcaneovalgus, but may be used to advantage in flat feet. The most important points of the operation are backward displacement of the foot and the maintenance of a leg with slight equinus.

Reid M R. The Use of Large Reverdin Grafts in the Healing of Chronic Osteomyelitis. *Bull Johns Hops Hosp* 9: 333, 1915.

The treatment of chronic osteomyelitis is based upon the obliteration of the bone cavity. Reid introduces a new method, the use of so-called pinch grafts. The technique is as follows:

The bone cavity is treated with Dakin's solution until it becomes lined with clean, firm granulation. Without the use of this or some other antiseptic solution, the granulation tissue will become crustaceous, forming an unhealthy base for the growth of the grafts. Two hours after the last irrigation with the Dakin solution, large, thick pinch grafts 1 cm in diameter are placed closely together upon the surface of the cavity. The grafted wound is then exposed to the air from six to eight hours. This period of drying serves to fix the grafts firmly into the granulation tissue. The grafts are then covered and held in place with a single layer of gauze firmly fixed to the skin.

During the next ten days saline compresses are applied. Dakin's solution is then used instead of the salt solution for six days, being applied by laying wet compresses directly against the wound every four hours during the day and every four hours at night. At the end of this time the wound is dressed with protective rubber or oil ointment.

The grafts grow quickly and cover the granulation tissue with epithelium in from ten days to two weeks. If the granulations become high, Dakin's solution is re-applied for one or two days to reduce the swelling. Caustics should not be used.

The technique described is of value especially for the closure of large bone cavities which are difficult to obliterate by other methods. The epithelial covering formed by pinch grafts is thicker and more durable than that formed by Thiersch grafts and therefore will better withstand the action of the moisture present in deep cavities.

S C WOODWARD, M D

Garspelli, W O. Arthroplasty of the Elbow. *Ann Surg* 6: 101, 1915.

Cases for elbow arthroplasty must be chosen judiciously.

The following pathologic conditions mentioned by the author decrease the chances of success or contraindicate surgical interference: (1) tuberculous, (2) osteitis with much shortening of the extremity, (3) extensive scars binding the skin to the bone, (4) extreme muscular trophy with reorganization of bone structure as when, after a long

time the medulla of the humerus and ulna become continuous, and (5) old rheumatoid bone extending a considerable distance on each side of the joint.

Two conditions alone justify arthroplasty: fractures with ankylosis following trauma, and ankylosis following infection.

There are five methods of arthroplasty:

1. Wide excision of the articular surfaces. Usually an unstable joint results.

2. The interposition of pediculated fascial flaps between the remodeled articular surfaces. This method has been almost lost.

3. The interposition of animal membranes. The drawback to this procedure is infection caused by foreign body irritation.

4. Free fascial flap transplantation.

5. Mechanical reconstruction of the surfaces of the joint and the interposition of various substances.

The author makes a 6- to 8-in incision on the posterior aspect of the arm and forearm, just external to the midline, beginning about the middle of the humerus and extending about 2 to 3 in below the elbow joint. Skin, superficial fascia, and deep fascia are incised and separated. In this manner the spontaneous of the triceps is exposed. This structure is dissected from above downward, making a long tongue attached to the olecranon below. The incision is continued through the muscular fibers of the triceps and the peroneum over the lower half and the peroneum then stripped from the lower end of the humerus. Scar tissue, callus, and loose body particles are removed.

About 3½ in is removed from the lower end of the humerus, and the cut end is remodeled into a surface convex from before back and a trumpet mouth to reproduce the normal anatomy of the bone. About 1½ in is cut from the tip of the olecranon process. The bone is removed until healthy spongy bone is exposed.

The radio-ulnar joint is not disturbed, but the surface of the radial head must be on the same level as the coronoid process. The peroneum and triceps muscle are dissected into double flaps, each is attached to the anterior capsule and serves to separate the raw bony surfaces. When the radio-humeral joint is normal and there is no ankylosis between the ulna and humerus, the radio-ulnar joint is not destroyed, a hemiarthroplasty being done between the humerus and ulna. When in such cases it is impossible to obtain posterior flap of sufficient size, the spontaneous tongue from the triceps is placed between the surfaces. The capsule of the joint is attached to the posterior aspect of the triceps and deep fascia.

In one case full flexion and extension have been secured with no motion in the radio-ulnar joint.

The after treatment is important, and there must be co-operation between the surgeon and physiotherapist. Active motion is essential.

JOHN MINCHIE, M D

Roberts, F. W. A New Approach to the Semilunar Cartilages. *J Am Med Ass* 1921, LXXX 608

The new approach described by the author eliminates strain on the wound when the knee joint is flexed and obviates suturing of the synovial membrane.

A blunt V-shaped incision is made one arm of which begins about $\frac{3}{4}$ in. above the upper border of the tibial condyle and follows down the border of the patellar ligament for distance of $\frac{3}{4}$ in. The knife is then carried transversely outward a short distance and then upward inside the lateral ligament to the level of the opposite arm. This incision is made through all tissues overlying the tibia including the periosteum. With a periosteal elevator the flap is separated and retracted upward until the coronary ligament is exposed. The coronary ligament is incised transversely at its attachment to the tibia. On further retraction the meniscus is exposed and may be dissected out with narrow-bladed knife. The periosteum and overlying tissues are then replaced and sutured in position with interrupted chromic gut sutures not including the synovial membrane. The skin is closed with silk. The firm suturing of the periosteum prevents strain on the knee wound even when the knee is flexed at 90 degrees.

FIG. C. MURPHY 21 D

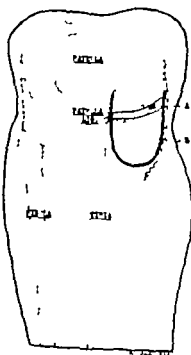


Fig. Line of incision for exposure of internal semilunar cartilage. A, internal semilunar cartilage. B, line of incision. (Roberts)

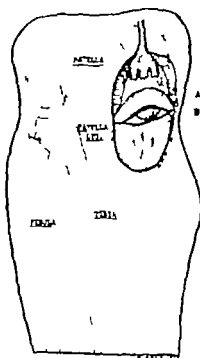


Fig. Flap retracted upward, showing exposure of meniscus on its under surface. A, internal semilunar cartilage. B, medial condyle of femur. (Roberts)

Mondor H. Wounds of the Knee (Les plaies du genou). *Presse med. Par* 9 2, XX 96

Mondor reviews the treatment of wounds of the knee during the World War. Arthrotoomy for drainage was the method in general use in the beginning but was abandoned because of its disastrous results. The treatment then adopted the joint was opened, side cleaned of all debris, closed by primary suture and treated by active mobilization.

In the war of 8-9 the immediate mortality of knee wounds in the French army under a policy of surgical retention was between 4 and 50 per cent, while in the German army in which immediate resection was done it was 80 per cent. In a series of 208 cases treated by arthrotoomy for drainage during the World War there were fifty-two deaths, thirteen secondary resections, and forty-one subsequent amputations in addition to numerous instances in which ankylosis resulted, while in 328 cases treated by mechanical cleansing of the joint followed by primary suture there were 32 recoveries without ankylosis.

W. A. B. 1904

Linger The "Grütl" Amputation in Insurance Medicine (Der "Grütl" in der Versicherungsmedizin). *Arch f. orthop. u. Verbr. Chir* 91 22 49

Linger considers the results of the Grütl technique as unfavorable from the standpoint of industrial

medicines. In his twenty-five cases of accident injuries full weight bearing capacity was present in only eight; no weight at all could be borne on the stump in thirteen and only partial weight bearing was possible in four. The patella was in proper position in twenty cases, and displaced without impairment of the weight bearing capacity in five. Shortening of the thigh amounting to 4 or 5 cm and atrophy of the musculature up to a minimum circumference of 1 cm at the midline were other sequelae. The permanent compensation averaged 60 per cent. For patients are fully able to

earn their living, seventeen are partially incapable (disabled), and five were unable to work. In 40 per cent of the cases a high amputation of the leg would have been sufficient. Very often difficulty is experienced with the artificial leg. The Gritti stump is not favored by manufacturers of appliances because it requires special construction of the weight bearing surface.

On the basis of his twenty-six cases the author comes to the conclusion that the Gritti amputation has no marked stages over low amputation of the thigh. (See page 342)

SURGERY OF THE SPINAL COLUMN AND CORD

Schede F. Puncture of the Prevertebral Abscess (Die Punktion des prävertebralen Abszesses) *München med Wochenschr* 9, 1911, 779

It must be assumed that the paralysis in spondylitis is caused less by collapse of the vertebrae than by the pressure of the prevertebral abscess. If the prevertebral abscess is to be punctured from the rear the surgeon must determine its depth in order that he may know how deep to insert the needle. Schede's procedure described in detail in this article makes it possible to determine the depth of the abscess by the aid of the X-ray.

It can be successfully evacuated only if the burrowing of the abscess has not proceeded too far. When the pus has once made its way down and the prevertebral abscess does not fill again and only a wall remains visible in the roentgenogram. Hence, puncture is less suitable for abscesses of the lumbar spine than for those of the dorsal spine, since the latter usually burrow later.

The author warns against the use of Calot's solution after puncture of spondylitic abscess. On account of the rapid diffusion of the cresonate either contained in the solution one of his patients suffered an immediate slight shock, with coughing and the expectoration of sputum tasting strongly of cresonate.

The effect of the relief of the pressure on the medulla is usually noted very soon after the puncture.

Puncture of prevertebral abscess is to be looked upon as a safe and very effective method much to be preferred to conservative treatment. It almost entirely excludes the possibility of secondary infection. (See page 342)

Kron and Wltsch. Cervical Rib (Letter (Haeppel)) *Deutsche med Wochenschr* 9, 1911, 915

A woman, 31 years old, complained of pain in the right arm, which occasionally particularly cold weather became more severe and radiated into the occiput. These attacks were characterized by a waxy pale discoloration of the right fingers and bluish discoloration of the tip of the right index finger.

Careful examination revealed distinct widening of the subclavian artery in the supraclavicular fossa

and rapid pulsation and a thrill under the exposed finger. When the artery was displaced hard resistance was noted. The last pulse was weak and the radial pulse weak. The roentgenogram revealed the presence of a cervical rib impinging upon the first thoracic rib. The patient delayed surgical treatment for two months.

At operation the subclavian artery was exposed by a Kocher incision. Since the time of the first examination it had become thrombosed. The rib was removed first in the direction of the vertebra and then in the direction of the chest. Rib care not to injure the brachial plexus, the transverse cervical artery or the scapular artery. The resulting hole in the dome of the pleura was covered by rotating tissue over it. A complete cure had not been obtained at the end of five months but the claudication showed pulsation.

There are other cases of cervical rib are reported in brief. The literature on the subject is reviewed and reference is made to Stenroos' operation which begins at the base of the neck. (See page 342)

Openshaw T. H. Traumatic Spondylitis. *Proc Roy Soc Med Lond* 9, 1911, Sect Orthop.

The author reports fourteen cases of traumatic spondylitis or fracture dislocation of the spine. In three cases the cervical vertebrae are involved in the dorsal vertebrae, and in five the lumbar vertebrae. In one case there is loss of motion in the neck and marked salting of the sinuses of the forearm and shoulder. Partial reduction of the dislocated vertebrae under anesthesia, as followed by several days later by loss of power in the other arm. This complication was transient, however, and the patient ultimately made complete recovery.

Another case reported that of a woman whose right arm became painful and weak following dislocation of the fifth cervical vertebra. By fall Openshaw made an incision over the median line of the neck and united the tissues together. Power in the right arm steadily returned. Removal of the wire after four months was followed by recurrence of the claudication.

Openshaw states that in fracture dislocation of the dorsal and lumbar spine the most important

sign is hyperaesthesia of the intercostal nerves, the so-called "girdle pain," or pain along the course of the lumbar or sciatic nerves. This sign is of value because it indicates which of the intercostal nerves corresponds to the site of the fracture dislocation. A stereoscopic examination is also of great aid in the diagnosis.

The X-ray will show: (1) anterior and lateral compression of the body of the vertebra; (2) wedge formation of the vertebra; (3) obliquity of the surfaces; (4) irregularity of adjacent surfaces of the vertebra; (5) gaping of the anterior part of the intervertebral spaces; (6)ipping of the anterior edges of the upper and lower surfaces; (7) central absorption of the vertebral bodies; (8) separation of the ribs due to kyphosis; (9) angular curvature; (10) ankylosis and synostosis; (11) lateral deviation and (12) rupture of the supraspinatus and interspinous ligaments.

For cases of traumatic spondylitis in the cervical region the author recommends manipulation to force the vertebra into place, the temporary application of a leather or felt collar or plaster of Paris, and wiring of the laminae, the wire being left in.

Cases in which the dorsal vertebrae are affected should be treated by recumbency if the condition is venous, by the application of a leather corset with arm supports, and by wiring if the kyphosis tends to increase.

When the lumbar region is the site of the lesion Openhaw applies a leather corset and laces the spinous processes together with silver wire.

Suppuration is rare unless there is an open suppurating wound elsewhere. The pain decreases quickly in severity and extent after the spine is immobilized. The cure is slow, requiring eighteen to thirty months.

The article is illustrated with seven roentgenograms. S. C. WOLFEBAUGH, M.D.

Schneider G. R. Rhizomelic Spondylosis Spondylitis Deformans (Spondylosis rhizomelique spondylitis deformans). *Ugeskr. f. Læger* 9, 1909, 93.

I eighteen of twenty-five to twenty-six very young persons exostoses suggestive of arthritis deformans were found although there had been no nervous symptoms during life.

One of the two cases reported, that of a man 4 years old, the author designates as case of rhizomelic spondylosis with typical complete ankylosis of the spinal column, kyphosis of the cervical and upper thoracic spine, obliteration of the lumbar curvature, and slight muscular atrophy. The X-ray revealed narrowing of the intervertebral discs and fusion of the bodies of the vertebrae. The roentgen features in the history are gonorrhea and syphilis. Otherwise the course of the disease is as the usual one, beginning with pain in the spinal column and ending with rigidity. The author leaves open the question of the etiology but is inclined toward the view that the gonorrheal infection may have been an exciting factor.

The second case, that of a 35 year old man, the author designates as a case of arthritis deformans. This began with pain in the vertebral column and the extremities and ended with rigidity of the spinal column in a markedly stooping position and muscular atrophy. The X-ray showed exostoses around the vertebral bodies which finally spread from one vertebra to another in the form of bony bridges. The author believes the diagnosis should be based on the X-ray findings. SERRY (2).

Godfield R. B. Bony Bridging in Tuberculosis of the Spine. *J. Am. M. A.* 91, 1909, 391.

The presence in the spine of hypertrophic changes associated with bony bridging and ankylosis of the vertebrae has been regarded since the advent of roentgenology as evidence of the strictly non-tuberculous nature of the disease. This theory the author believes is incorrect. Since it is known that mixed infections due to external drainage of cold abscesses often give rise to bridging, he regards it as not improbable that such bridging may result also from secondary infection of the tuberculous process carried by the blood stream from some septic focus in the body.

The localization of the chronic low grade infection in the superficial portion of the vertebra in juxtaposition to the osteogenetic periosteum may be responsible for the laying down of bone, the same process in the center of the vertebra having no such action. The regional location of the vertebra in the spinal column is also a factor since as a rule the spurs are found in the lumbar region where the reaction to the strain of weight bearing is greatest. Although usually tuberculosis does not produce bone, the reaction to any infection varies with the situation of the process, and the spinal articulations are more apt to react to infection by ankylosis than any other joints in the body. D. R. TISSON, M.D.

Kleinberg S. The Operative Treatment of Scoliosis. *Arch. Surg.* 9, 2, 631.

A complete cure of structural scoliosis cannot be obtained by any known method. Treatment is directed toward reducing the curvature, improving the appearance of the back, and maintaining the improvement.

Both Hibbs and Forbes advocate a fusion operation to obtain osseous union of the posterior arches of from eight to eleven vertebrae.

He then employs the Hibbs fusion operation and a graft of beef bone.

Before the operation the patient is placed on a convex frame, the highest point of which is under the midthoracic region. Traction is applied to the head by means of a Sayre halter and to the trunk by pelvic belt with weights suspended from cords over pulley at the foot of the bed. Weight is not applied until the position is no longer irksome. It is then applied gradually. The head weight arises from 5 to 10 lbs. and the pelvic weights are a little heavier. If there is much anteroposterior or lateral deformity

a Balkan frame is used and forward or lateral traction is applied. Traction is continuous except a few times, during the bath and during massage. The patient is ready for operation when the maximum degree of correction is obtained. A great degree of improvement is obtained in four to eight weeks by this method (can be obtained in more than six months by means of corrective plaster of Paris jackets).

The preparation for the operation is important. A beef bone graft cut to the shape and size desired is bodied for several hours placed in a closed container. It is either used just before the operation bodied again for half an hour. Transverse rucks are then cut in it for vascularization. Three days before the operation traction and massage are discontinued, the back is thoroughly scrubbed, and a sterile dressing is applied. On the second day the same procedure is repeated. On the morning of the third day the back is painted with one half strength tincture of iodine and another sterile dressing is applied. If the operation is to be performed in the morning the iodine is applied the night before.

The author's operation combines the technique of Hibbs and Albee. Most of the arches of a simple curve and all the arches of the dorsal segment of a compound curve are included.

In making the skin incision the knife is carried through to the muscles. The arches of muscles and peritoneum are laid bare. The paravertebral elevator laterally to the tips of the transverse processes and the joints of the articular processes are scarified or destroyed. Claps of bone are removed from the laminae and placed across the interlaminar spaces. The spinous processes are split and turned down so that the tip of the process above fits into the space at the base of the spinous process below. The spinous processes of the twelfth vertebra at the upper limit of the curve and of two below the lower limit are split. A graft long enough to cover the vertebrae operated on about 6 mm wide, somewhat less than 6 mm in thickness, and of a curve corresponding to the spinal curve is laid in the wound upon the laminae and transverse processes on the concave side of the curve and its ends are embedded between the split segments of the transverse processes. The paravertebral muscles and muscles are sewed with interrupted kangaroo suture, and the subcutaneous tissue and skin with catgut. A warm sterile flannel jacket is applied over the sterile dressings.

In a week or ten days, when the patient has recovered from the immediate effects of the operation he is replaced on the frame, traction is applied, and massage and exercise of the limbs are begun. At the end of eight weeks he is usually able to stand up. A light cellulose fitting plaster jacket is then worn for several months.

The entire course of treatment requires from six to nine months.

The immediate results obtained by the author have been satisfactory but the time which has elapsed is not sufficient to arrive at conclusions as to the final results. JOHN SIMMONS, M.D.

Hickenbroch M. The Causation, Pathology and Treatment of Spinal Blisters Occurring and Its Sequelae (Zur Kasualistik, Pathologie und Therapie der Spinalblisters und ihrer Folgekrankheiten). *Monatsschrift für Kinderheilkunde*, 1922, 19.

The case reported was that of a girl 13 years old who had had an increasing deformity of both feet since her third year and nocturnal enuresis since earliest infancy. Examination revealed talipes curvus with hyperextension of the toes of both feet. On passive dorsal flexion distinct spastic resistance was felt. The skin of the feet was livid and cold. At the level of the last lumbar vertebra was a swelling 7 cm long and 4 cm wide which raised the skin about 5 cm. This tumor was elastic and the skin over it was movable. The roentgenogram showed a defect in the arches of the third, fourth and fifth lumbar and the first, second, and third sacral vertebrae.

At operation curved incision was made with its base downwards. The tumor appeared to consist of normal muscle tissue embedded in the fascia. When the vertebral canal was opened the dura was found adherent to the posterior aspect of the vertebral arches by firm fibrous bands, some of which were 1 cm thick. The bands were separated and removed. Careful separation of the muscle mass from the substantia revealed a sort of spinous process on both sides, each as attached in the center by a firm and apparently bony tissue forming the substratum of the muscle mass. Following resection of this formation lipoma about the size of cherry was found adherent to the dura and vertebrae.

One hour after the operation the feet were normal in their color as normal. The operation cured the enuresis also. A month later the deformity of the feet was corrected surgically. FOUR (2)

SURGERY OF THE NERVOUS SYSTEM

Langehaek O. Technique of Nerve Sutures (Zur Technik der Nervenastik). *Zentralblatt für Chirurgie*, 1923, 153.

Following excision of the neuroma, the nerve stumps, through which silk threads have been drawn, are introduced to a cold artery and brought as close together as possible by drawing on the threads. Before the threads are cut and withdrawn the ends

of the artery are fastened to the nerves on both sides by fine silk sutures. The nerves are joined through an opening in the middle of the artery.

If the space between the ends of the nerve is so great that despite stretching, the ends cannot be joined the artery is left unopened or the opening is stitched with catgut and the skin wound closed. After successful stretching by changing the position

of the joint the artery is again exposed and opened and the nerve sutured. Subsequently the artery is removed. (Z)

Brown, F. and Stahl, O.: The Physiological Effect of Extirpation of the Peri Arterial Sympathetic Nerve Plexus. *Peri Arterial Sympathectomy* (Ueber die physiologische Wirkung der Extirpation des perivascularien sympathischen Nervengeflechtes perivascularielle Sympathektomie). *Klin. Wochenschr.* 1921, 1, 40.

Even in a peri arterial sympathectomy performed according to the Leriche method it is seen on sepa-

rating the adventitia that the caliber of the dissected portion of the vessel gradually diminishes. This contraction lasts up to six hours in the exposed area and occasionally inhibits the peripheral pulse. Ultimately the tension which prevailed previous to the operation is exceeded. Evidently there is first an irritation of the skin and then a hyperaemia which causes paralysis of the vasoconstrictors. The effect of adrenalin was not considered as the experiments were performed under anaesthesia. Hyperaemia is regarded as the most important factor in the cure of vasomotor trophic disturbances.

(W. MERTZ, DISCUSSOR (Z))

MISCELLANEOUS

BLOOD

Brown, G. O. Blood Destruction During Exercise. Blood Changes Occurring in the Course of Single Day of Exercise. *J. F. for M.* 9, 2, xxvii, 43.

The studies of several investigators have shown that normally the destruction of erythrocytes is accomplished, in part at least, by process of fragmentation in the blood stream. There is evidence that the breaking up is the result of mechanical injury.

The investigations here reported by Brown were undertaken to determine whether an increased rate of blood destruction can be demonstrated during exercise. Since the subject is so closely linked with the general question of fluid and cell changes during exercise a number of observations were made in this connection, and it is with the latter that this article is largely concerned.

Types of blood volume determination have shown themselves to be of practical value for use on the living animal. The first is the well-known carbon monoxide inhalation method. The second entails the addition of some substance to the blood plasma and the subsequent determination of its degree of dilution. Since the carbon-monoxide method cannot be repeated readily within a single day the dye method as adopted for use in the thorax experiments.

The experimental animals were dogs. The chief reason for choosing dogs, apart from their general utility was the special susceptibility of their red corpuscles to mechanical injury. The animals were kept in individual cages and fed upon a mixed diet containing considerable meat. To prevent changes in the blood plasma food was not given upon the day of the experiment until after the last blood-volume determination had been completed. For purposes of exercise treadmills were used. The number of miles traveled as recorded by a bicycle odometer attached to the machine.

Previous studies by other men have shown that considerable reliance may be placed on plasma volume figures obtained by the vital red method.

The author's findings indicate that the initial concentration of the blood during exercise is not due to loss of fluid, since there is no decrease in the plasma volume. On the contrary one investigator reports that there is a distinct increase, especially when the exercise is prolonged.

The calculation of total cell volume was made on the basis of the percentage volume of cells in the blood of the jugular vein, the total plasma volume being known. Haemoglobin, pigment volume and red-cell count are also influenced by changes in the ratio of cells and plasma. The initial increase in the total cell volume observed in these experiments could not have been due to mere swelling of the cells as the haemoglobin also increased.

It is not impossible that changes in the size of the red cells occur during exercise. A general swelling of the cells might readily lead to an increase in the cell volume. However the close parallelism between the curves for cell volume and pigment volume indicate that the results were not due to this cause for if this were the case there would have been disproportionate changes in the pigment content and cell bulk. The red counts recorded by the author were too few in number to furnish reliable data as to a change cell size and the literature on changes in cell size during exercise is extremely meagre.

Price Jones, working with dried blood smears, concluded that the cells become larger. The author's findings tend to confirm this view as the decrease in the cell volume during prolonged exercise is not nearly so great as the decrease in the pigment volume.

Brown states that after prolonged exercise both total cell volume and pigment volume fell well below the maximum noted after ten minutes of exercise. Because of the uncertain factor of cell distribution it would be unwise to conclude that blood destruction occurs during exercise, on the basis of the data of these experiments alone, although there is no doubt that the findings are in harmony with such a view.

From his findings the author draws the following conclusions:

An increase in the percentage of cells and hemoglobin in the blood of the jugular vein occurs early in the course of exercise and probably results from redistribution of the red corpuscles, increasing their proportion in the peripheral blood.

2. As exercise is continued, there is a definite increase in the plasma volume.

3. A coincident decrease in the total cell volume and the pigment volume during prolonged exercise suggests blood destruction.

GEORGE E. BAILEY, M.D.

BLOOD AND LYMPH VESSELS

Witte, W. C. F. and Zillich, H. E. Traumatic Rupture of the Femoral Artery with Haematomata. *MASSACHUSETTS MED. J.* 9, xxi, 8.

The authors report a case of traumatic rupture of the femoral artery in a boy 13 years of age due to a motor-cycle accident. The patient was brought to the hospital in a state of shock with a firm, non-pulsating mass 10 in. in diameter in the left inguinal region between the skin and muscles of the abdominal wall. The leg showed sensory and motor disturbances. Pulsation was noted in the popliteal space.

Morphine was administered and external heat applied. The next day the artery was ligated. On the twelfth day amputation of the leg was done because of the development of dry gangrene of the foot with a definite line of demarcation below the knee.

Operation is contra-indicated in shock unless it is necessary to save life or the condition is becoming rapidly worse. In the treatment of shock the physician must not be forgotten. Heat is essential. The feet should be warmed to prevent cerebral anemia, and if the blood pressure falls below 80, saline or glucose solution should be given intravenously or subcutaneously. Transfusion of blood is indicated by persistent hemorrhage. Hot rectal enemas of coffee or barley are of great benefit. Strychnine is contra-indicated. *MARCE H. HOSKIN, M.D.*

Corniloley. Surgery of the Arteries. Transplantation of Arteries by the Nagotte Method. (*La clonage artérielle testative de greffes artérielles par la méthode de Nagotte*). *SOCIÉTÉ FRANÇAISE DE MÉD.* 923, xxi, 138.

War surgery made little progress in the surgery of the arteries. As ligation of the main arteries (humeral and femoral) leads to gangrene in 40 per cent of the cases, the continuity of the vascular lumen must be maintained as much as possible. In experiments in which a calf artery 3 cm. long was implanted into the carotid artery of a dog according to the method of Carrel with interrupted sutures the tube healed but soon became impermeable although an attempt was made to prevent coagulation by previous irrigation with citrate solution. In vascular suturing the interrupted suture is better than the continuous suture. *STRATTON (2).*

SURGICAL DIAGNOSIS, PATHOLOGY AND THERAPEUTICS

Chlori, O. M. Extirpation of the Adrenal in Epilepsy. (*Zur Frage der Nebennierenentfernung bei Epilepsie*). *DEUTSCHE ZEITSCHRIFT FÜR CHIR.* 19, clxxi, 244.

The von Haberer and the Schmidt cases have abandoned this operation. Following technically difficult extirpation of the adrenal gland done by von Haberer in the case of an epileptic 29 years old subphrenic abscess and empyema developed. During the stormy convalescence the epileptic attacks became less frequent, but later recurred again in their original severity. *RANDOLPH (2).*

Kremer, H. Singultus (Ueber den Singultus). *DEUTSCHE ZEITSCHRIFT FÜR CHIR.* 19, 27, 35.

Singultus is due to a clonic spasm of the diaphragm resulting from stimulation of the respiratory center. It may be caused (1) through the central nervous system (2) chemically through the blood stream, and (3) reflexly through stimulation of sensory fibers of the phrenic and sympathetic nerves.

The author discusses singultus as a symptom of disease, citing for illustrative cases from the literature.

The various types of singultus include the fetal singultus, the unilateral clonic spasm of the diaphragm, and the postoperative singultus appearing particularly after operations on the stomach and the urinary tract.

The treatment indicated when other remedies fail is phrenicotomy or blocking of the phrenic nerve by the injection of novocaine or freezing.

In a case reported numerous drugs were used of no avail, and even after a unilateral phrenicotomy the singultus returned. After division of the phrenic nerve on the thoracic side cure was effected through complete paralysis of the diaphragm. The patient then complained only of slight dyspnea in the dorsal position. *FRANKLIN (2).*

ROENTGENOLOGY AND RADIUM THERAPY

Dumas, W. The Scientific Basis of Short Wave Length Therapy. *AM. J. ROENTGENOL.* 1922, vi, 76.

Recent advances in roentgen therapy have emphasized the importance of employing very penetrating radiation, and of accurately estimating the dosage. The primary object of roentgen therapy is the treatment of malignant disease as the destruction of the tumor tissue. If the tumor lies some distance below the surface of the skin, the radiation projected into the tumor must first pass through the skin itself and the intervening tissues. The amount of radiation that can be projected into and absorbed by the tumor depends upon the tolerance of the skin and intervening tissues.

Three factors determine the fraction of the radiation reaching the skin which penetrates to the tumor.

below it () the inverse square law () the absorption of radiation by the tissues, and (3) the effect of secondary radiation.

The first factor is a question of solid geometry only. Its magnitude does not depend upon the kind of roentgen ray used. The other two factors differ in magnitude for different kinds of roentgen rays. In general, tissues absorb less radiation if the wave length is short than if it is long. Secondary radiation also depends upon the wave length. If the wave length is short, a larger amount of secondary radiation will reach the tumor than if the wave length is long. It is therefore a problem of great importance in deep roentgen therapy to produce roentgen rays of short wave length.

The practical solution of measuring roentgen ray wave lengths, the determination of just what wave lengths a roentgen tube produces when operated at certain voltages, the effect of interposing absorbing materials or filters in the path of the rays, the variation depending upon the mode of exciting the tube, the differences produced by using tubes with anodes of various metals, are problems with which the author has concerned himself for a number of years. Much of the research work along these lines is described briefly.

Since many factors enter into the production of the beam of roentgen rays, the roentgenologist should use some method of measuring the radiation. In estimating the dosage instead of trusting to measurements of milliamperage, current, filtration, and focal distance. The use of an ionization chamber for this purpose has proved satisfactory. The author describes this chamber and the method of using it. The present methods of measuring roentgen ray intensities and wave lengths are much more accurate than those employed in the determination of the biological effects produced by the rays. Because of the increase in the accuracy of estimating dosage the roentgenologist now possesses a method

of treating certain types of disease that is not equalled in precision. In any other branch of medicine or surgery.

ABRAHAM HARRIS, M.D.

Levin, I. The Intraperitoneal Insertion of Buried Capillary Glass Tubes of Radium Emanation. Results in Two Cases of Tumor of the Gastro-Intestinal Tract. *J Am Med Ass* 9 1919, 3074.

The burying of thin tumors of capillary glass tubes containing radium emanation is a comparatively new departure in radium therapy. In the course of the last two and a half years the author has used this method extensively in cases of intraperitoneal tumors of the gastro-intestinal tract, the uterus, and the ovaries, and in the treatment of retroperitoneal tumors. An exploratory laparotomy is performed. When it is found that the tumor cannot be completely removed by operation the emanation tubes are inserted into it and the necessary palliative surgical procedures are then carried out. The laparotomy incision is sutured immediately.

Two cases are reported in detail. One was a case of obstructing tumor in the second portion of the duodenum, and the other a case of tumor of the transverse colon. In both cases the obstruction was removed in large part and the patient's condition markedly improved.

The method is still too new to warrant conclusions as to its final results in cancer, but its efficacy is evidenced by the results obtained in the two cases reported in this article and several others which will be reported later. Following its use the patient makes an uneventful recovery and there is no rise in temperature and no peritoneal irritation or subsequent sloughing of tissues. The insertion of radium emanation does not add in the least to the hazard of the operation. The tumor diminishes in size considerably in the course of from six to eight weeks.

ABRAHAM HARRIS, M.D.

GYNECOLOGY

UTERUS

Hietzeberg, A. A Improved Method of Supporting the Bladder and Vagina After a Radical Hysterectomy for Proliferative. *Am J Obst & Gynec* 1913, 14, 633

The operation described the uterus is removed in the usual manner and the broad ligaments are ligated in section lower than the uterus. The uppermost ligature includes the uterine end of the tube and round ligament.

If the tubes and ovaries are removed, the infundibulopelvic ligament is drawn over and its inner end included in the ligature applied to the uterine end of the round ligament.

The upper stumps of the broad ligament thus formed are then brought across the median line of the pelvis so that the stump of the left ligament may be sutured to the cut edge of the right vaginal wall and the stump of the right ligament sutured to the left vaginal wall. The stumps are not brought into the vagina but are inserted into a pocket external to the upper end of each lateral wall of the vagina.

The traction made upon the vaginal walls must be carefully graded. It is adjusted by drawing down the ligament, determining its length and tension, and selecting the point to which it should be sutured to the vaginal wall. The suture employed purse-string suture includes within the broad ligament stump about one fourth of the circumference of the opening of the vaginal wall on each side and supports and contracts the vaginal wall. The sutures on both sides are pulled before either is tied. While traction is made upon both ends of each suture the ligaments being drawn into the position they are to occupy the end of the posterior vaginal wall is sutured to the posterior surface of the interposed ligaments. After the resection the upper edge of the anterior vaginal wall is sutured to the anterior surface of the ligaments.

The advantages of crowding the broad ligaments and all things each of them to the vaginal wall of the opposite side are that a shelf is formed for the bladder, the opening of the vagina is closed by means of oblique traction upon the walls and dilation of the vaginal wall and consequent lessening of the support of the base of the bladder are prevented.

E. L. CORNELL, M.D.

Corcoran, J. A. *Statistics and Technique in the Treatment of Fibromyoma of the Uterus by Radiotherapy*. *Am J Roentgenol* 1914, 14, 8

The object of this study is to outline the procedures employed in treating fibromyoma of the uterus and hemorrhage from other benign causes to present a series of statistics giving the effects of

the treatment on the symptoms and lesions, and to discuss the symptoms which might be ascribed to the methods used. The study is based on 190 cases of such cases are treated between June, 1914, and July 1, 1915.

Stress is laid on the importance of preparing preliminary to the treatment and the proper selection of cases. Radium is used if the woman is over 35 years of age and bleeding is the important symptom in the cases of younger women with a definite myoma. In such operation is contra-indicated, and in the cases of young women without myoma suffering from uterine bleeding associated with tuberculous or other serious disease in such pregnancy could not be advisable. Dilatation and curettage followed if necessary by roentgen ray treatment are employed in the cases of young women when it is desired to cause temporary menopause or merely to lessen the flow. As even moderate doses of radium in the uterus cause atrophic changes predisposing to dystocia, roentgen ray are preferable. If the patient is in good surgical risk, if she is under 35 years of age, if the mass is over 5 cm in diameter if the diagnosis is doubtful (especially if ovarian tumor is probable), if there is evidence of degeneration or inflammation in the growth, if there are subserous pedunculated myomata, and if the pain or urinary symptoms are the important factors, some type of excision is employed in preference to radiotherapy.

In the treatment of women 40 years of age or older radium is usually used in doses of about 1,000 to 500 mgm hrs. but the dosage is increased if the bleeding is thought to be due to alteration or if the tumor increases the distance from the radium to the ovary. A larger dosage is used also for young women when permanent menopause is desired. The radium acts on the endometrium, the uterine muscles, and the ovary. It is therefore distributed in small units in order to minimize the amount in the endometrium, and is placed well in the fundus to avoid the cervix if possible. The Doan's tubes are placed in rubber tubes some thick.

Supplementary roentgen ray treatment is given a large tumor when it is believed that permanent menopause will not result from the intra-uterine application of the radium. It is used also whenever there is recurrence of bleeding, especially if the recurrence is permanent.

A general summary of the effects of irradiation shows that the bleeding either ceased or became normal in 40 per cent of the cases after one radium application and roentgen ray series within a month after operation in 10 per cent, within two months in 3 per cent and within six months (usually three) in 1 per cent. In 14.5 per cent recurrences developed which required supplementary treatment.

or stopped spontaneously. In about 5 per cent (three cases) the treatment failed. The results were more or less the same among the different types of cases except that they were uniformly slow in tumors of large size. Dysmenorrhea ceased in all cases, showing that the pain depended on menstruation. On the other hand, pain in various parts of the body and unassociated with menstruation was not satisfactorily relieved, neither were urinary symptoms. The effect on the size of the mass varied greatly.

The immediate effect of the treatment on the patient was slight in the majority of cases. The roentgen ray usually caused nausea and slight malaise and, rarely, dizziness or vomiting. Following the intra uterine application of radium the symptoms were the same. The late effects were practically the same as those which occur during the normal menopause. These effects are discussed at some length.

The author attempted to estimate the desirability of the method by balancing the harm done with the benefits obtained in each case. Such a survey showed that the method was unqualifiedly successful in 9 per cent of the cases. In 3 per cent, more harm than good resulted, and in 6 per cent, errors in judgment or technique qualified the result.

The following conclusions are drawn:

1. Radiotherapy of a myomatous or grossly normal uterus will stop all bleeding not due to ulceration, cause myoma to shrink more or less rapidly and arrest dysmenorrhea.

2. Radiotherapy will only partially relieve urinary distress and pain not associated with menstruation.

3. As a result of the artificial menopause from radiotherapy, hot flashes are the rule and in some cases there is an increased nervous irritability.

4. In the majority of patients nervousness is diminished probably because of the improvement in the general condition.

5. The condition of women suffering from nervous disorders may be made more comfortable.

6. Changes in secondary sexual characteristics and in sexual desire and satisfaction are negligible.

7. Blood pressure studies are unreliable. There seems to be an elevation in blood pressure in 6 per cent of the cases treated.

8. Normal pregnancy is possible after temporary menopause.

ALBERT HARRIS, M.D.

Beckers, M. What Is the Best Method for the Treatment of Uterine Fibromyomata by Means of the Roentgen Ray? *Am J Roentgenol* 9 11, 797.

Thousands of observations made in 11 countries have demonstrated the efficacy and harmlessness of roentgen therapy in the treatment of uterine fibromyomata. In questions pertaining thereto require further discussion, namely (1) the contra-indications to the use of the roentgen ray and (2) the best method of employing them.

Toddy roentgenotherapy is contra-indicated only when surgical intervention is absolutely necessary.

The method used depends upon the choice of the portals of entry and the desirability of giving the treatment in one or several sittings. Theoretically the first point depends upon whether the operator believes the desired effect is obtained by castration of the ovaries, as maintained by most German radiotherapists, or that direct action is exerted upon the myomata in addition to the ovaries. The latter view is held by the majority of French radiotherapists and by the author this assumption being based on the progressive decrease which occurs in the size of the tumor before the amenorrhea sets in. Practically, the methods employed by the Germans and the French give the same results because the portals of entry chosen invariably encompass the myomatous uterus as well as the ovaries.

With regard to the value of the single intensive irradiation advocated largely by the Germans, as compared with repeated smaller irradiations, the author states that a massive dose given at a single session of short duration will give a result more speedy but does not take into account the variable radiosensitivity of different persons, is not always effective or sufficient, and may cause a reaction in the form of irradiation sickness which incapacitates the patient for some time.

The giving of divided doses, as advocated by the French and by the author has the great advantage that it does not cause any marked functional trouble and therefore does not oblige the patient to alter her mode of living or give up her work. Its chief value consists in the direct action of the weekly irradiations upon the myomata which causes progressive destruction of the neoplastic tissues. By this method the total destruction of the ovarian follicles is more definitely assured and the dosage is suited to the patient's radiosensitivity.

ALBERT HARRIS, M.D.

Davis, L. Observations on Cancer of the Uterus. *Rhod Island M J* 9 333.

Three hundred and forty-eight operations for cancer were performed in the Massachusetts General Hospital 1909 and 43 in 1910. Radical surgical removal of deep-seated cancer yields a definite percentage of true permanent cures. Recent figures reported before the meeting of the American Surgical Association last May showed 60 per cent of five-year cures in breast cancer without glandular involvement. In cancer of the lip the results are even better.

Although cancer of the uterus gives distinct signs, it is rarely detected early. The United States mortality records for 1911 list 1000 deaths due to cancer of the female generative organs. Ninety per cent of these were due to cancer of the uterus. As the annual increase of the death rate from cancer is about 3.5 per cent, it is probable that today 1,000 women die from cancer of the uterus every month.

The precancerous cervix is not easy to describe but there are certain conditions which are generally supposed to predispose to cervical cancer. Among

the left ovary and uterus. The uterus was thickened and retroverted. The ovaries were enlarged and the uterine margin was indistinctly felt above the surrounding tissue, hard to the touch, confined to one side, and bleeds easily. suggests squamous cell carcinoma. The invading type of adenocarcinoma involves the honeycomb type of the cervix with little or no external manifestation.

Adenocarcinoma of the body of the uterus remains localized for a comparatively long time. The results of total hysterectomy are therefore excellent, a cure being obtained in about 75 per cent of the cases.

Squamous cell epithelioma of the cervix is more malignant than desmoplastic sarcoma. Eight times a frequent cause of malignancy than a group of tumors. It requires radical therapy better than surgery. The author does not share the view that full doses of urethane or chemotherapy of the cervix follow distal irradiation. In complete hysterectomy the removal of glands and all of the regional lymphatic treatment can be obtained. Cure in 40 per cent of the cases.

PAUL W. M.D.

ADRENAL AND PERI-UTERINE CONDITIONS

Efficient Pyosalpinx Opening in the Urinary Bladder Operation Cure (Pyosalpinx in der Uterusblase) Opera. in Gynae. Spital
H. 1911

In the case of a girl aged 25 years, history of illness was diagnosed as pyosalpinx. The author found bilateral adnexa (the right side).

Using the use of a mirror, the pyosalpinx was shown to be a bulging redness in the trigone of the bladder. The right ureter could not be found. Pressure on the swelling caused immediate relief of the urine. The author performed bilateral laparotomy. A fistula between the bladder and the right tube with bladder. The patient was cured.

Mrs. J. G. and Maser C. The Rubin Test and Its Therapeutic Application. Am. J. Obst. & Gynec. 1912, 14, 618

Of seventy women seeking treatment for sterility, forty-four had been pregnant. The period of sterility ranging from three to thirty years. Of the women of the tubes, a fourth in only eight of the first four cases of bilateral sterility and in only six cases of unilateral sterility. Six of the seventy women had had surgical treatment for the condition. Some of them had been castrated three times. They had had plastic operations on the cervix and several had been subjected to an abdominal operation apparently for retroversion. None had escaped the annoyance and expense of frequent office treatments supplemented for long periods by vaginal douches.

The incidence of occlusion of the tubes is high in the women who had been subjected to operations

for the relief of the sterility than in those who had not been operated on.

It is contended by some gynecologists that 75 per cent of the cases of primary sterility in the female yield to dilatation and curettage supplemented by various non-operative measures. This percentage the authors believe is far too high. 4 to 5 per cent of the cases of primary sterility there is occlusion of the fallopian tubes, condition which precludes the possibility of pregnancy without recourse to an operation. The treatment of sterility in the female should never be undertaken without definitely excluding the presence of occlusion of the fallopian tubes. The use of an encephalon is unfounded. In no instance are there ruptures pointing to this condition.

Following plastic operation on the tubes for the relief of sterility intra-uterine gas inflation will reveal the results of the treatment and determine if the tubes are patent.

One negative result is not enough to establish sterility.

Occasionally polyps in the horns of the uterus may occlude the tubal ostium as bulbous and proliferate. All succeed in forcing the gas through. In such event a careful exploration of the uterine horns by means of the curette and placental forceps is indicated.

Very few cases of primary sterility give a history of recent pelvic infection. In some instances occlusion of the tubes may be due to catarrhal salpingitis. The latter condition which generally goes unnoted until resolution is hampered as it presents itself by hyperemia and thickening of the mucous membrane with secretion from the mucosa, and some destruction of the cilia. When it subsides the condition may leave sufficient unimpacted mucus in the tubal lumen to cause occlusion. In such case the tubes may be opened by gas inflation of the uterus which will dislodge the mucus.

E. L. COLEMAN, M.D.

Schiller H. Does the Ovary or Corpus Luteum Control the Ovarian and Uterine Cycle? J. Am. Gynec. 1911, 14, 65

Ovaries and uterine cycles are governed by the ovarian follicle. The ovum is the beginning and the end of ovarian function. It determines in early embryonic life the formation of the female organs and the female sex characteristics and later governs the general and biological changes during the period of female function.

The true premenstrual decidual is the result of hormonal action of the corpus luteum.

Menstruation occurs because the ovum is not in pregnancy.

Corpus luteum extract causes hypertrophy and hyperemia of the uterus and tubes, but only in the presence of the ovaries. Theoretically its greatest therapeutic result should be expected in menorrhagia, metrorrhagia, and hysteroptosis.

J. L. COLEMAN, M.D.

Meigs, J. V. Fibroma and Sarcoma of the Ovary
A Report of Two Unusual Ovarian Tumors.
Boston M & S J 9 2, 1877 95

The ovarian tumors reported were removed at the Free Hospital for Women in Brookline Mass. The author states that no case of either of these types of mixed tumor of the ovary has been reported in the literature. The case histories are given in considerable detail.

The final diagnosis in the first case as endometrial polyp trophying endometrium normal but beset with multiple leiomyomata of the uterus, small fibromata of the right ovary, fibrosarcoma of the left ovary.

In the second case the final diagnosis was trophic endometrium normal, appendix hydrosalpinx, bilateral malignant papillary cystadenoma with epithelium of the serous type, bilateral metastatic adenocarcinoma, fibroma of the ovary.

C. H. D. via, M. D.

EXTERNAL GENITALIA

Rosenstein. The Formation of Vagina in Genital Vestigial Malformation (Zur Schenkung bei angeborenem Vaginalekt). *Monatsschr f Geburtsh Gynäk* 9 1 in 76

The two procedures used for the formation of the vagina are the small intestine plastic of Bald in Mori and the rectal plastic of Schubert. The latter is less dangerous than the former.

In forty seven cases operated upon up to the present time by the Schubert technique there were no deaths. In forty one cases in which the Bald in Mori technique as employed there were ten deaths. The Schubert operation is also much simpler than the Bald in Mori technique being an extraperitoneal procedure performed in one stage. In the Bald in Mori technique requires a vaginal operation and laparotomy with excision of the small intestine.

The author reports cases operated upon by the Schubert method. The patient was discharged with good result at the end of three four days.

WOLFGANG Z.

Rosenthal. The Formation of an Artificial Vagina (Ein Beitrag zur künstlichen Schenkung). *Zeitschr f Gynäk* 10 1 in 76

A four day girl with complete absence of vagina and uterus operated upon according to the Mori-Bald in Schubert method. A loop of small intestine 5 cm. length cut out so that the anus and the loop openings were closed. Sutured with catgut. Then the mesentery of the loop was cut off and was left into it and implanted into the abdominal cavity. At point 1 cm. from the lower end. One and one half years later the vagina as penetrable for two fingers. It could not be reached with a finger, and there was no intertrigo.

WOLFGANG Z.

Bullock, H. A. Utero-Vesico-Vaginal Fistula
Med J & Straits 9 1, 700

The case reported was that of a woman 41 years of age who had been married for fifteen years and had had eight children, the youngest of which was 9 years old at the time the patient was seen by Bullock. All the births were spontaneous except the last. The last labor began suddenly with a considerable loss of blood. The patient remembered nothing regarding it except that she had been taken in a semi-conscious condition to hospital where an anesthetic was administered and was later told that the child was delivered by forceps. She was convalescent for three weeks and confined to the hospital for three months.

After this birth on July 6, 1920 she did not pass urine naturally till operated upon by the thoracic September 10. On examination the os uteri as found to be cut off completely from the vagina. There was not the muco-test passage by which a fine probe could be passed into the uterus from the vagina.

Cystoscopic examination revealed rent on the posterior wall of the bladder which obliterated the right ureteral orifice. It was then decided to explore the abdomen through an incision in the middle line above the pubes. The fundus of the uterus was found tilted forward and bound firmly to the bladder by a hard inflammatory mass which invaded the right side of the broad ligament. The left fallopian tube and ovary were freed from the uterus and the left ureter as exposed to make certain that it would not be injured. The right ovary and fallopian tube were removed. A trace of the right ureter could be found for 5 cm. from the bladder. This portion was extrinsically bound up in the inflammatory mass extending from the bladder into the broad ligament.

The uterus and the upper third of the vagina were removed. The right ureter was in the broad ligament. During this step if the operation the urinary bladder was necessarily opened. The right ureteral orifice then appeared a small sacculous about 6 mm. in depth. The right kidney was trophic. The ragged edges of the bladder were resected and sutured together with catgut suture in the layers. The vagina which had been separated from the bladder then closed round small drainage tube and the peritoneum sutured.

A second rubber drainage was placed at the point where the bladder neck was sutured adjacent to the upper end of the tube placed in the vagina, brought through a small opening left in the peritoneum of the broad ligament closed over the peritoneum in the manner in which the stomach is folded. Witzel's gastrostomy and brought out through the midline incision the bladder.

Both drainage tubes were removed by the third day and the patient was out of bed on the tenth day after the operation.

Cysto-copic examination made August 14, 1921 revealed phosphatic incrustations along the line of

the wear on the bladder and slight cystitis. The incrustations were freed by rubbing the cystoscope along the line of the scar and drawn off late by Higdon's evacuator.

The patient today enjoys a remarkably good health and her only inconvenience is slight chronic inflammation of the bladder which is gradually improving.

C. H. D. vs. M. D.

MISCELLANEOUS

Chase, H. C. Levator Hernia (Podendal Hernia): Report of a Case Operated upon by the Combined Route. Review of the Twelve Previously Reported Cases. *Surg. G. and G. M.* 9: 555, 1917.

The author opinions Blake term levator hernia more appropriate for the condition under discussion than the term podendal hernia. Von Winckel suggested the term subpubic hernia. Podendal hernia are separated from perineal hernia by the transverse perineal muscles.

Levator hernia may be congenital or acquired. There are three forms: (1) direct hernia or those anterior to the broad ligament; (2) indirect hernia or those posterior to the broad ligament; and (3) combined anterior and posterior hernia. In the last type the sac pushes forward under the broad ligament and breaks through the levator muscle. The point of entrance of the posterior or indirect hernia is the internal iliac point of the pelvic diaphragm. Here there is no covering by the levator muscles and the rectovaginal fascia is separated from the endometrium by only the areolar tissue. The posterior hernia is more common. In front of the broad ligament the levator muscles overlap and there is no neck point. Hence only the transvaginal hernia is tensor.

The internal boundaries of the posterior hernia are the broad ligament, the rectum and the sacrotuberous ligament and imaginary line between the sides of the triangle. The anterior hernia is bounded by the uterus and bladder, the round ligament, the vagina and the transverse perineal muscles. The bony formed by the lesser ischia of the pelvis.

In the posterior hernia the sac is large and definitely defined and contains the gut and the bladder or the gut, the ovary and the tube. The combined type of hernia contains both bowel and bladder. In the anterior hernia the sac is less defined and only partial because the bladder, such as the contents of its contents, is only partially covered by peritoneum.

The posterior hernia passes downward and forward perforating first the rectovaginal fascia and then the endometrium. The combined hernia passes forward and downward under the broad ligament, perforating only the rectovaginal fascia and becomes anterior to the broad ligament before perforating the levator muscle. The anterior hernia passes directly downward and the ring and point of exit.

The external ring is bounded externally by the ascending ramus of the ischium and part of the descending pubic ramus, medially by the vagina, and posteriorly by the transverse perineal muscle. The constrictor cunni muscle is lateral and the ischio cavernosus external. The neck triangle of exit is covered only by two layers of the triangular ligament.

The posterior hernia is covered by skin, areolar and peritoneum, and penetrates the two layers of the triangular ligament. The endometrium forms the levator muscle and the rectovaginal fascia. The anterior hernia penetrates the same structures but the peritoneum only partly forms the sac.

The neck spot in the pelvic diaphragm is at the site of the rectovaginal junction. The long perineal loop of the sigmoid siles downward and becomes part of the content of the hernial sac. The block of the partial obstruction of the rectovaginal junction account for the intermittent rectal symptoms.

Pregnancy and parturition are the most important etiological factors. The majority of the hernia hernia are first noted during labor or soon afterward. The trauma of difficult or an instrumental delivery may be the condition. Not a single recorded case in the male has been reported. The youngest patient mentioned in the literature was 7 years of age and the oldest 5.

A levator (podendal) hernia at any age appears in the posterior part of the labium majus. The medial half of the protrusion is covered with mucous membrane and the other half with integument. The ordinary signs of hernia such as impulse on coughing and reducibility, is noted. These factors differentiate levator hernia from inguinal and femoral hernia. Bartholin's abscess, rectocele, and cystocele are readily differentiated.

The treatment consists in high ligation and excision of the sac and closure of the ring. In cases of posterior hernia this may be done when there is a defect sac. In cases of anterior hernia, if greater destruction of the levator muscle and fascia especially when areas have been torn away by a hysterectomy operation and ligation and removal of the sac are responsible, closure of the ring may be accomplished by transplanting a pedicled flap of skin from the thigh. Even the transplanted pedicled round ligaments to close the defect above and a pedicled flap of skin to plug the subpubic triangle below.

The author gives the histories of twelve cases of podendal hernia collected from the literature and one of his own. Only one case is cured in Chase's case. The hernia was of the combined type. The patient was an obese well-developed woman who had had six children and three miscarriages. The chief complaints were a bearing down pain in the lower right abdominal quadrant, the right labium, and the vagina, a sense of pressure and a bearing down feeling in the rectum and bladder on coughing or straining and a sensation suggesting that the contents of the pelvis were dropping out. The condition

developed suddenly about the fourth month of pregnancy and grew worse after the forceps delivery of a full term, normal child.

When seen by the author the hernia was the size of a fist, and the patient was three months pregnant. Operation was done in several stages. The first stage, consisting of dilatation and curettage, bilateral salpingectomy, withdrawal of the gut and bladder from the sac, closure of the hernial ring, and sigmoidectomy was followed by plastic repair through a vaginal incision with high ligation and excision of the sac, closure of the slit in the levator muscle and ischioanal fascia, and perineorrhaphy. The patient made a satisfactory recovery and has remained perfectly well during the past year.

The author draws the following conclusions:

Protruding hernia, although extremely rare, should be easily recognized.

Cases should be divided into anterior, posterior or combined types as a basis for operation. Every case should be subjected to operation.

WALTER C. BURDET, M.D.

Matthiessen G. A Contribution to the Statistics of Carcinoma of the Genital Organs (Beitrag zur Statistik der Genitalkarzinome.) Zisch's Gynecol. Gynæk. 922 xxxiv 06.

The author reports on 690 cases treated at the Basle Women's Hospital from 1899 to 1908. In most of the cases the condition occurred during the forty-sixth to the fifty-fifth years of life. Carcinoma of the vaginal portion of the cervix, the cervix, the tubes, and the ovaries occurred between the forty-sixth and fiftieth years, that of the body of the uterus between the fifty-first and fifty-fifth years, that of the vagina between the fifty-sixth and the sixtieth years, and that of the vulva between the sixty-first and seventieth year.

Carcinoma of the ovary occurs most often in young women. The percentage relationship is as follows: in the vagina, 8, the vulva, 5, the ovary and tube, 7.8, the body of the uterus, 5, the cervix, 31.7, and the vaginal portion of the cervix, 38.5. The large number of vaginal carcinomata is striking, as the primary carcinoma is believed to be very rare. Also striking was the large number of cases of carcinoma of the body of the uterus. Almost one-third of the carcinomata of the uterus are in the body of the uterus.

Women who have given birth to children or have aborted several times are more apt to have carcinoma of the cervix, whereas those who have never given birth to children are affected more frequently by carcinomata of the corpus. Previous gynecological diseases seem to have no influence upon the development of carcinoma. The relative rarity of endometritis in the histories of patients with carcinoma of the uterus is also striking.

An interesting feature is the period of time elapsing between the first sign of the disease and the time medical aid was sought. The author gives the average as 7.8 months but this figure is

not very accurate as he included also carcinomata of the ovary which cause late symptoms. From 1899 to 1914, the operability of the carcinomata gradually increased from 19.14 to 29.8 (during the World War) it decreased, and from 1908 to date it has increased.

With regard to the duration of the disease up to the time of death, calculations could be made only

35 cases (38 per cent). Many patients, chiefly those seen during recent years, are still living. Of the 235 women, 197 were operated on and eighty-eight were inoperable. In the cases in which operation was done, the average period of life was 19.4 months and the primary mortality 6 per cent. In the inoperable cases the duration of life averaged 5 months. If carcinoma of the cervix is considered separately it is evident that of the 147 women subjected to operation those in whom cervical operation was done lived a shorter time than those with carcinoma of the cervix who were not operated on. Women operated on but not given radiation treatment lived about thirty-six months,

while those operated on and subsequently given radiation treatment lived only nineteen months. Women whose condition was inoperable and who were not given radiation treatment lived ten months, while those with equally advanced carcinoma who were irradiated lived fourteen months. With regard to each subject the author cites the statistics of other clinics for comparison. VOLTA TASSERER (Z).

Clark, J. O. and Keene, F. E. The Treatment of Cancer of the Pelvic Organs with Moderate Irradiation. Am. J. Roentgenol. 9, 803.

The cases reviewed were as follows: cancer of the cervix, 39; cancer of the fundus, 17; cancer of the vagina, 12; cancer of the uterus, 4; cancer of the cervical stump, 11; recurrent cancer of the vagina after hysterectomy, 2; primary cancer of the vagina, 2; cancer of the urethra, 8; cancer of the bladder, 6. The results were poorest in the cases of cancer of the cervix. With possibly three or four exceptions the cases of cancer of the fundus are inoperable, judged clinically but as compared with cases of cancer of the cervix they showed the same favorable difference in the results of treatment as is noted in the surgical treatment of lesions of these parts of the uterus.

Of the patients treated over four years ago for operable carcinoma of the pelvic organs 63 are dead, 17 are five (20.9 per cent) are living, and seven have not been traced. Of those treated over five years ago 15 are dead, four cannot be traced, and thirty-one (9 per cent) are living and free from manifest evidences of the disease. The estimated percentage of patients treated for cancer of the cervix who are alive nearly or beyond five years after the operation is between 6 and 8. Of the 4 patients treated, the vast majority were in advanced stages of the disease, quite beyond the possibilities of surgical

intervention. A large number have had their symptom mitigated or completely arrested for a time; the frightful hemorrhages have been arrested for invariable periods, and frequently entirely stopped. In a smaller percentage pain present at the time of treatment has been relieved. The number of cases which have been cured, as reckoned on a five year basis, is larger than expected.

On the basis of their study of these cases the authors have reached the following conclusion:

1. Radium in six-month periods will yield most gratifying results if properly applied.

2. To pursue a set course without variation in the frequency of treatments, regardless of the progress of the healing, is hazardous.

3. To attain the best results, the first application should be made under tracheo-oxal anesthesia as this permits a more careful examination and the radium can be brought more advantageously into contact with the malignant areas by means of radon tubes or radium needles. Gaseous packing has proved of much greater use for protection than metal shields.

4. The process of cure passes through three stages: local destruction, connective tissue formation, and hyalineization.

5. A hysterectomy after successful irradiation of an otherwise inoperable case is hazardous.

6. The results of irradiation in cancer of the cervix may remove this class of cases from the surgical field.

7. Cases of cancer of the fundus, unless too far advanced, or unless operation is definitely contraindicated, should be subjected to hysterectomy followed from fourteen to twenty-one days later by light irradiation of the vaginal fornix.

8. Irradiation is dangerous immediately before or after an operation, and in fresh operative fields.

9. Frequent repetitions of irradiation are probably unnecessary and possibly hazardous as the chief blow is struck at the first application.

10. The development of irradiation keratitis may be reduced to a minimum or almost completely prevented by pushing the healthy tissues away from the zone of intensive radiation by means of a dilated vaginal pack. (Source: HARRIS, M. D.)

OBSTETRICS

PREGNANCY AND ITS COMPLICATIONS

Lepayre. Pregnancy After Operation for Cancer of the Breast (Cancer du sein opéré et grossesse). *Bull et mem Soc d chi de Par* 9: 213, 49

Troust recently reported fifteen cases of pregnancy following ablation of one breast for cancer. In thirteen, cancer developed in the other breast after from 1 to 10 years.

The author has observed 11 cases of pregnancy following operations for breast cancer. In both of these cancer developed in the remaining breast. The first case was that of a woman aged 40 years. Pregnancy ensued less than 1 year later and the cancer from which the patient died developed within the following six months, i.e. in the sixth month of pregnancy.

The second case was that of a woman 43 years old. One and one half years after a thorough radical operation the patient became pregnant and within six months cancer developed in the remaining breast and resulted in death.

These two cases fully bear out the findings of Troust, the only difference being in the earlier incidence of pregnancy and the consequently earlier recurrence of the cancer.

The author concludes that women who have been operated upon for cancer of the breast should be sterilized, preferably by radiation of the ovaries.

W. A. BERRY

LABOR AND ITS COMPLICATIONS

W. W. W. B. P. Further Experience with Pituitary Extract in the Induction of Labor. *Am J Obst & Gynec* 9: 15, 603

In the 95 cases in which pituitary extract was used to induce labor the result was successful in 90 per cent. The maternal mortality was nil. There were no cases of laceration of the cervix and no greater incidence of pelvic floor lacerations than in ordinary labor. There were 11 cases of retained placenta and 11 cases of rather severe hemorrhage accompanied by shock following the expulsion of the placenta. The latter were cases of primiparae over 30 years of age. The number and nature of these complications was no greater than the number of deliveries in which no pituitary extract was used.

There were 11 fetal deaths. Fetal death rate of slightly over 6 per cent. Three of these babies were monsters. Two died in utero apparently from placental infection due to pregnancy toxemia. Three died of cerebral hemorrhage and two of tetanospasms three days of birth. In two cases autopsy was not permitted. Thinking not considering the nature of the cases in which induction was

carried out the result so far the fetal death rate is concerned compares favorably with those obtained by other procedures.

A great deal has been read and written regarding unfavorable effects on the mother from the administration of pituitary extract in the course of labor. In practically all such cases, however, the drug was incorrectly given. Pituitary extract should be used in the course of labor for one purpose only, i.e. to stimulate uterine contraction when it is markedly inadequate.

To give pituitary extract when there is a rigid cervix or a case of delay due to a small pelvis, a large head malposition of the head or rigid pelvic floor is a court disaster. Rupture of the uterus and fetal death are bound to occur if it is used under such conditions. This is no argument, however, against its use in properly selected cases.

When pituitary extract is given to induce labor the first dose is 1 c.c. If there is any idiosyncrasy to the drug on the part of the patient it is revealed the first time as in a case cited, in which severe vomiting resulted. The administration can be then stopped. If the first dose causes no ill effects, subsequent doses will be equally well borne as the drug does not have a cumulative effect. The author experiences the uterine contractions induced have been of a tonic nature. The first contraction is usually longer than the succeeding ones, but the latter are of the nature of ordinary labor pains. In most cases they begin to die away in fifteen or twenty minutes and must be further stimulated by another dose of pituitary extract. If contractions can be kept up sufficiently long to start dilatation of the cervix and separation of the lower pole of the membranes, the labor will proceed naturally thereafter.

F. L. COXWELL, M.D.

Beck, A. C. Is Interference Justifiable After Twenty Four Hours of Labor When No Other Indication Is Present? *Am J Obst & Gynec* 9: 6, 3

As the private patients in the group studied were treated by a number of different men and no definite plan was followed in the care of the prolonged labors, only the service cases were considered from the standpoint of the end results. In the 1,138 general service cases there were seventy nine long labors. All but three of these ended in spontaneous delivery. Forceps were used in six cases, either because of marked bungee in the fetal heart rate or prolonged second stage. In breech extractions were done for the same reasons, and in five cases of relative disproportion in which the head failed to engage after thorough test of labor mechanism section was done. Three stillbirths and the deaths

of three infants on the first, fourth, and fifth days, respectively, made the infant mortality 7.6 per cent. One mother died on the third day after a cesarean section. Addition of proof of the value of cesarean section is shown by the end results in the entire series. Of the 2,125 deliveries which included this group of seventy-nine prolonged labors, twenty-one resulted in stillbirths and four in were followed by the death of the child. Within the first twelve hours total infant mortality of thirty-six (3.3 per cent). Two mothers died, maternal mortality of one in 560 cases.

From the fact that in many of these cases of prolonged labor the head is not engaged after only four or even thirty hours of labor the author concludes that manual dilatation or incision of the cervix and forceps delivery would not have given good end results (those obtained).

Of the series of women studied, 791 were included in the Long Island College Hospital and Out Patient Department. One hundred and forty-nine labors lasted over twenty-four hours. Of this number 49.3 per cent terminated in twenty-four to thirty hours, and 50.7 per cent continued for more than thirty hours. Of the 550 Cesarean in the hospital series, 104 (9 per cent) were in labor more than twenty-four hours. Slightly over one-fourth of the 266 dry labors are prolonged.

Early rupture of the membranes seem to be the most common etiological factor. The exact cause responsible for the long labor in the rest of the cases is not known. The study of individual cases indicates that the chief difficulty is faulty uterine contractions.

In the conduct of labor the author gives the patient as much rest as possible. Her pulse and temperature and the fetal heart rate are carefully noted. Comfortment is given as frequently as the patient can be forced to take it. If the interval between contractions allows her to rest and, if possible, to sleep. As soon as the membranes rupture if the cervix is full or almost fully dilated and a good abdominal binder is adjusted and the anodyne efforts are encouraged. This routine which is followed in all cases, is excellent in cases of long labor. It also serves the patient's strength for the second stage. The only additional measure employed in a prolonged labor is the administration of liberal doses of morphine. Whenever the character of the contractions show that the uterus is fatigued sufficient morphine is given to stop the labor and allow the patient to sleep.

Nearly all women who show relative disproportion will deliver spontaneously if they are allowed thorough rest of labor.

Seventy-four of the infants in the series weighed 4,000 gm. or only four indications could have been necessary if a larger child had been required indication for such interference.

The large number of spontaneous deliveries occurring after a test of labor and the low infant and maternal mortality proved that cesarean section was fully restricted. F. L. CORNELL, M.D.

Holmes, R. W. and Burdick, A. L.: The Test of Labor I. Relation to Cesarean Section. Comparative Results Obtained by Elective and Secondary Operations Based upon Personal Experience of Ninety-Two Cases. J. O. G. & Gynec. 9:1:579.

There is comparatively little difference in the safety of operation performed in advanced labor, before the advent of exhaustion, over that of operation performed in the last days of pregnancy. The danger depends on the management of the case before and during the hours of labor. The judgment of the surgeon, the technique used, and the character of the personnel of the operating room influence the outcome as much as any additional circumstances incident to the labor. Within certain limits the duration of labor is of comparatively little importance but, again examinations and attempts at delivery from below are dangerous, as is also protraction until the vital forces are at the lowest ebb.

Prolonged rupture of the membranes often means menace to the patient's life during the postoperative period. The woman who has truly elected operation still has a more placid and usually more comfortable convalescence than woman who has been subjected to hours of distressing labor. It is essentially true that those given the test of labor still have the same elevation of temperature, those who have the elective section, but in the former the increase still continues longer than in the latter, fact indicating lack of rest, more incident to fatigue. The longer the woman is in labor with membranes ruptured, the higher the pulse rate and the more prolonged the elevation of temperature as compared with women not in labor or with membranes intact. Further it is clearly evident from the study of ninety-four cases that to 20 per cent of women operated upon in labor will run more stormy course with somewhat prolonged thermal elevation—a true (though acid) picture—especially if the membranes have ruptured the clinical picture being distinctly one that in cases operated upon electively.

The danger of rupture of the perineal seal is not slight. The authors agree with the dictum, once a cesarean, always a cesarean.

They have firmly adhered to the principle of the lower section with only minor deviations. Therefore unless conditions dictate otherwise they always enter the uterus through as small an abdominal incision as possible.

The following conclusions are drawn. The adoption of modern surgical principles has been the most important factor in reducing the risk of cesarean section in the present surgical period.

The second great factor in lowering the maternal mortality is abstinence from spinal examinations.

A third of great importance in increasing the safety of sections is the routine employment of rectal touch.

4. The possibility of section should be clearly and definitely determined in pregnancy and in every step in the conduct of labor this possibility should be borne in mind.

5. An absolute pelvic deformity demands section before labor begins and at a set hour.

6. The woman with relative disproportion should be given an adequate test of labor unless this is definitely contra indicated.

7. The test should not be so prolonged that it causes the faces of exhaustion or abnormal increase in the pulse rate or temperature.

8. Prolonged rupture of the membranes has very injurious effect upon woman in labor if labor is unduly prolonged after the rupture storm commences is probable in 1 per cent of the cases and fatal outcome in an occasional case.

9. If section is performed slow long labor with weak and irregular contractions is not so dangerous as shorter but violent type of labor.

I. All probability a hard labor liberates protein bodies or other by products of forced metabolism which are inimical to the tendency of flowing cesarean section.

A cesarean section performed before labor is almost certain to be successful and associated with minimal physical distress if performed by skilled hands.

Labor increases the physical distress and jeopardizes the consciousness.

3. Above all things, prolonged labor with prolonged rupture of the membranes, vaginal examinations, or futile attempts to deliver from below is disastrous.

4. Cesarean section is far more dangerous for the woman than spontaneous labor or somewhat difficult operative delivery.

5. The sum total of discomfort associated with cesarean section is as great as, or greater than, the inconveniences and pain of labor.

6. Because of the facts cited and the increased mortality section should be done only clear indications.

L. I. CORNELL, M.D.

Hunt, J. C. and Van Dohlen, W. W. Cesarean Section: Its Indications and Technique Based on 232 Operations. *J. Am. Med. Ass.* 1918, 304.

Following a brief summary of the indications for cesarean section the authors state that the rules are in direct ratio to four factors: (1) the length of time the patient has been in labor; (2) the length of time the membranes have been ruptured; (3) the number and technique of vaginal examinations; and (4) previous attempts at operative vaginal delivery.

The operator must choose to fit the requirements of the particular case one of at least five different techniques: (1) the old classical operation with long abdominal incision and eversion of the uterus before it is incised; (2) the classical operation with short, high abdominal incision with emptying of the uterus *in situ* and then eversion for suturing; (3) the extraperitoneal or low cervical cesarean section following the method of Beck; (4) the Porro operation with dropped cervical stump; and (5) the Porro operation with manipulation and drainage of the stump.

The indications, the advantages, the disadvantages and the technique of each type are discussed. After the operation the head of the bed should be raised 15° and daily vaginal douches with sterile water should be given.

The dictum once cesarean always cesarean is not true unless the indication is a permanent condition. Rupture occurs in subsequent pregnancies in less than 3 per cent of the cases. In the series of unselected cases reviewed the mortality was 3 per cent.

ROY E. CANNON, M.D.

PUERPERIUM AND ITS COMPLICATIONS

Williams, P. F. Postabortal Hemolytic Streptococciemia. *Am. J. Obst. & Gynec.* 9, 636.

Four cases of postabortal hemolytic streptococcus bacteremia ending in recovery under the use of polyvalent antistreptococcus serum are recorded. Illegal instrumentation to cause abortion is considered the chief etiological factor of such infections. The dangers of non aseptic procedures are evident from the fact that of a series of 100 women seven were found to harbor the hemolytic streptococcus in the cervical canal, and eleven others showed non hemolytic types of streptococci. A prompt diagnosis of such febrile conditions is best made by blood cultures. Cervical cultures if they are positive and show the same organism as that recovered from the blood stream are of value in supporting the diagnosis made from the blood findings.

Serum must be given early and in repeated doses, ranging from 50 to 100 cc. depending upon the clinical and laboratory findings. Reaction is the rule and rarely from mild to severe chills and skin rashes. 1 case of severe reactions desaturation may be necessary.

The action of the hemolytic streptococcus on the circulating blood is not as severe as might be supposed. The cases reported showed little pelvic disease the most noteworthy findings being slight peritonitis and parametritis.

L. I. CORNELL, M.D.

GENITO URINARY SURGERY

ADRENAL, KIDNEY AND URETER

Hurpeter C. M., Brown, T. H., and Delcher H. A.
Abnormalities of the Kidney and Ureter. A
Case of Double Kidney and Double Ureter
with a Review of the Literature. *J. Urol.*
9, 2, 148-150.

In a few cases reported there were two kidneys on the same side and sometimes a third ectopic kidney. Double kidneys vary from the ectopic type of kidney composed of two parts separated by connective tissue.

In no instance are there two ureters opening from a single pelvis. The pelvis are usually placed one above the other rarely is one found in front of the other. The lower pelvis is usually larger than the upper. As a rule the portions of the kidney drained by the two ureters are unequal in size. In most cases the external form of the kidney is normal and duplication may not be suspected. Always there is a distinct band separating the parts of the kidney. In some cases the ureters may run a distinct course and have double openings in the bladder or one ureter may open into the bladder and the second into some other part of the genito-urinary tract. In other cases the ureters may come together and enter the bladder by a single orifice.

The bifurcation of the ureters may be near the kidney but is usually within 1 to 5 cm. of the bladder. When the ureters are closely associated, the ureter which drains the upper part of the kidney is posterior but in very rare cases an anterior position before entering the bladder.

The authors give the types of ureteral duplication as follows:

Unilateral duplication complete or incomplete depending upon whether the ureter has one or more openings into the bladder.

Bilateral duplication complete or incomplete depending upon the number of ureteral openings.

Forty cases of complete bilateral duplication were collected. There are 9 cases of incomplete bilateral duplication, 18 cases of complete unilateral duplication, and 133 cases of incomplete unilateral duplication.

The authors summarize the data of 38 cases of complete or incomplete unilateral duplication in a table.

In the literature the authors found reports of the bifurcation of a single ureter near its lower extremity. There are a number of cases in which the upper and lower ureters opened in abnormal situations, the bladder or extravesically. Most of the reports are copy reports. In a fair number of cases the condition was discovered during operation. Only a few was the diagnosis made before operation.

Improved urological methods have made diagnosis possible in every suspected case. The authors suggest that pyelograms be made in every case in which there is the least suspicion of the condition. An abnormal organ is more susceptible to pathologic changes than a normal organ. A very large number of double kidneys show disease. Double kidneys with double ureters, hydrocephrosis and pyonephrosis are very common. These conditions were found twenty times in twenty-nine cases in which a surgical operation was done for double kidneys. The results of one portion of a double kidney has been successfully by many operators. The successful resection of tuberculous half of double kidney. The authors find that the diseased part of the kidney is almost always the upper part. The lower half is usually of normal shape and the ureter discharges normally.

One observer found that when the duplicate ureters in neighboring orifices the kidneys do not show visible alteration, while if one orifice opens abnormally the part of the kidney corresponding to this orifice is usually diseased.

The origin of the known anomalies is very obscure. None of the explanations advanced to date seems to account for all the satisfactorily.

The authors conclude their article with the statement that the point of importance for practical medicine is that these anomalies occur with greater frequency than is generally believed and therefore should be borne in mind in the diagnosis of urological conditions. *Grav. J. Trau. & M.D.*

Crabtree F. G. The Nature and Significance of Renal Stasis. *Surg. Gynec. & Obs.* 1922, 135, 731.

As a result of his investigations, Crabtree concluded that the consideration of renal stasis from the physiological rather than the pathological point of view might reveal facts bearing on the treatment of this condition. By this he means determining whether the kidney is hampered in the elimination of urine from the pelvis rather than whether there is distention sufficient to term hydrocephrosis. If below is it is wrong to rely on the diagnosis entirely upon the pyelogram to the evidence of data obtainable by the cystoscope and ureteral catheterization. As a result of such exclusion, beginning distentions and small hydrocephrosis are also overlooked. It is time when remedial measures can be best applied.

Crabtree defines "pelvic content" as the amount of urine present in the pelvis. The term "pelvic capacity" is the amount of urine which the pelvis can hold.

indicated by the amount of fluid which can be injected into the pelvis up to the quantity which causes pain and then withdrawn the amount withdrawn, not the amount injected represents the capacity.

There are four types of renal stasis between the normal kidney and the large hydronephrosis: (1) acute stasis, (2) subacute stasis, (3) intermittent stasis, and (4) relative stasis.

Acute stasis. This condition the author believes is almost entirely an emergency condition, occurring most commonly with stone but also following accidental ligation of the ureters, the plugging of the ureter by a blood clot during an acute attack of pyelonephrosis, and in cases in which the cystoscope was used during acute pyelonephritis. Even though the obstruction is complete it is not serious in its after-effect as the kidney generally returns entirely to normal when the obstruction is removed.

Subacute stasis. By this term the author refers to cases of partial obstruction in which back pressure occurs over dilation of the kidney continuing for period of weeks or months. As an example is mentioned the back pressure kidney of pregnancy. He has observed cases in which stasis of 200 to 300 c.c. decreased to 15 c.c. at the termination of pregnancy. Further dilatation may result however from the progress of the disease without the intervention of subsequent pregnancies. Another type of subacute obstruction is that due to ureteral stone.

Intermittent stasis. This is the most common cause of this condition are renal mobility and supernumerary vessels. Renal mobility is probably intimately associated with aberrant arteries in all cases in which pelvic stasis results. The great majority of palpable kidneys are functioning normally in spite of some degree of mobility but the greater incidence of pyelonephrosis, hydronephrosis, persistent pyelitis, and renal pain on the right side as compared with the left in the female as compared with the male and in the adult as compared with the child, points to significance in these anatomical differences. It indicates also that renal damage is a progressive condition.

Relative stasis. By this is meant apparent obstruction to the outflow of urine. This condition may be present without symptoms. The function of the kidneys is usually good and there is no thinning of the cortex indicating serious back-pressure. The ureterovesical valve is often competent, and the injection of fluid into the bladder results in its reabsorption into the kidney pelvis. The condition is probably congenital. HIRAKA L. KUROKI, M.D.

Barney J. D. The Question of Recurrent Renal Calculi. *Surg. Gynec. & Obst.* 9: 333, 1913.

The author calls attention to the paucity of the literature on recurrent renal calculi. This subject is unpopular because of the long and patient labor which the accumulation of data involves, and be-

cause of the disappointing results revealed by the investigation. Barney believes that in studying these cases it is necessary to examine the patient personally, the patient's statement by word or letter being insufficient.

The recent investigation of cases in the Massachusetts General Hospital showed unsatisfactory results. Of seventy cases of nephrotomy the results are known in thirty-five. Of sixteen cases in which roentgen examination was made, fourteen showed the presence of stone on one or both sides. These figures would be greater if all cases had been checked up by the X-ray. Many were unquestionable cases in which stones were left at operation. Of the cases of stone admitted to the hospital sixteen had been previously operated upon for renal calculi, and of this number ten (75 per cent) had been operated upon on both sides.

In recent investigation regarding recurrences postoperative roentgenograms were made in twenty cases. In nine (45 per cent) the films showed a stone still remaining in the kidney. In the absence of such postoperative roentgenograms, which clearly demonstrate the author's point that stones are frequently overlooked during operations, these stones would have been recorded as recurrences if found at a later date.

The various causes responsible for failure to remove all of the stones, and the aid given by the fluoroscope at the time of operation are discussed. The author's conclusions are as follow:

As there has been little investigation regarding recurrent or overlooked renal calculi it is desirable that various observers in different clinics undertake such an investigation.

A roentgenographic examination made during or very shortly after convalescence is essential for the accuracy of the results in such study.

While the few data at hand show that stones are found in the kidney after operation in surprising number of cases, it is impossible to state which of these stones are recurrences and which are stones left at operation. Unquestionably recurrence is very frequent.

The complex character of the interior of the kidney, hemorrhage from its mucosa, and the comparative inaccessibility of this organ in many cases contribute to the difficulty of removing all stones.

Although various procedures may be resorted to for this purpose none is infallible. It would appear that the fluoroscope offers the most promising prospects for success.

Pre-operative study cannot be too painstaking, nor must the possibility of superimposed shadows of calculi be overlooked.

A second operation for the removal of remaining stones is advisable in most cases and should be done soon after the first operation.

Pyelotomy is unquestionably the operation of choice and is often advantageously combined with partial nephrotomy.

HERMAN L. KURTSCHEK, M.D.

Hofe O. Obstruction of the Common Bile Duct and Auricular Duct Solitary Cyst of the Kidney (Cholelithen erkrankung und Aneurysma durch Solitär Cyst der Niere) *Munchen med Wochenschr* 9. Jhr, 179

Solitary cyst of the kidney are rare. Their symptoms are usually light but they may cause severe disturbances by pressing upon the urinary passages or the neighboring organs. Hofe reports a case in which a tumor the size of a fist in the right upper part of the abdomen of a woman 36 years old proved at operation to be solitary cyst of the kidney. The growth had caused displacement and torsion of the right kidney and ureter and through pressure upon the excretory biliary passages was responsible for the development of chronic enteritis. *Korr u. Z*

Oehlecker F. The Partially Transperitoneal and Partially Extraperitoneal Operation on the Kidney. Extraperitoneal Operation After Manipulation of the Peritoneal Sac (Die teil transperitoneale und teil extraperitoneale Nierenerkrankung extraperitoneale Operationen mit Verkleinerung des Peritonealhuckens) *Flückers Arch* 62. Jhr, 15

Transperitoneal nephrectomy lies behind a all extending through the peritoneal sac it hinders growth and rise to incarceration of the intestine. With the author's modification of the operation the separation in the abdominal cavity is a cleft and the abdominal space is somewhat diminished. Before the true kidney operation is performed the abdominal cavity is completely closed by suturing the parietal to the parietal peritoneum on the medial side. The operation is then performed without entering the peritoneum. Lumbar drainage is instituted.

This operation is recommended especially for cases in which the kidney mass is in abnormal position and for obscure cases. It is begun with a parietal incision. *Arch. u. Klin. Chir.*

F. Müller, H. D. Supernumerary Ureters with Contralateral Operation. *J. Urol.* 9. Jhr, 495

Duplication of the ureter is common in formation but a supernumerary ureter with an extra vesical opening is rare. A review of the literature shows that fifty-one cases of this malformation have been reported prior to the present time.

Of the several theories advanced to explain the double ureter the most plausible is that there is a separate origin from the old duct. In the process of downward growth the low ureter reaches the bladder first, usually here the normal ureter is found while the upper ureter continues to descend and shifting with the old duct mesial to the first attached ureter until it reaches the urogenital sinus. The Wolffian duct about the ureter continues to shift to still low level. If the ureters are liberated to grow close upon the wall will be found close together in the bladder but if the

are liberated at different times they will be farther apart so that the upper ureter may be carried even 1 or below the internal urethral orifice. The practical points learned from this embryological study are:

1. A double ureter may unite at any point between the bladder and the kidney and empty into the bladder as a single tube.

2. When there are two separate openings the distance of the ureter are distinct in their course to the bladder.

3. The ureter opening most caudad comes from the cephalad portion of the kidney and that from the lower pole occupies the normal position in the bladder.

4. When the ureter opens into the urethra, the urethral opening is always on the floor.

5. When the ureteral opening is in the vagina it is on the anterior wall and never on the lateral wall.

6. The ureter emptying lowest comes and lies to the inner side and behind the more normally located ureter.

7. In the female the ureter may empty into the vagina the tube of the vagina, fallopian tube, uterus, or Gartner's duct.

When the opening, the lower end of the ureter has usually been dilated, either as a result of or as a result of a long history of instances the distention extended to the kidney which is found to be trophic in the part drained by the supernumerary ureter.

The usual history given is that of constant dribbling, light and dark urine, in addition to normal voiding. In few patients control is fairly good but is occasionally weakened by child bearing. It is noteworthy that in most instances the condition remains unrecognized until adult life. Given due to the fact that the renal tissue drained by the abnormally placed ureter is almost inactive and passes out urine as it does very feebly. When the condition is suspected and simple inspection does not reveal the opening, the patient should be given indigo-carmin intra-venously and pledges of urine should be placed in the rectum and catheter. If sufficient dye is excreted the ureter is not open.

Here the location of the opening. If the patient is female the patient should be given three or four gr doses of methylen blue and re-examined the next day. Lymphography will locate the orifice in the urethra. In the X-ray pelvis the upper portion of the kidney may be found irregular in contour and in the pyelogram the upper calyx may be missing if the kidney had atrophied.

In the cases reported the following operations have been done: (1) ligation, (2) anastomosis of the dilated end of the ureter and the bladder, (3) implantation of the ureter into the bladder, and (4) resection of the upper pole of the kidney. For cases in which considerable amount of renal tissue is drained by the accessory ureter the author advocates the removal of the accessory ureter and there is no

dilatation and no infection, ligation is aduable. In cases with dilatation, infection, and small amount of renal tissue resection is the best procedure.

Myrissa reports the following cases

CASE 1.—The patient was a girl 10 years old who voided normally but complained of constant dribbling of urine. A cystoscopic examination after the injection of indigo-carminic showed the dysparens from abnormally situated right and left ureters. Cotton packed in the vestibule was soon found stained just below the meatus. A ureteral catheter inserted for a few seconds found on vaginal palpation to pass to the left side. After catheterization an attempt was made to direct the ureter out and turn it into the bladder. An incision was made through the ureteral and vaginal mucosa and an anastomosis effected with catgut. The distal end of the ureter was ligated and a retention catheter placed in the bladder. Seven days after the operation the leakage recurred. At a secondary operation performed three weeks later the ureter was mobilized for a distance of $\frac{1}{2}$ in., wound passed into the rectum, the bladder and out of the opening for the neighboring of the ureter and the ureter pulled into the bladder by holding the suture, and secured with chromic catgut. This ureter functioned for only six months, but the incontinence was cured.

(c) The patient's omentum of the right side had a history of incessant doubling and normal function. Cystoscopy showed a normal bladder and function, but the extra-uterine lateral opening could not be found. A supra-pubic hysterectomy done for large fibroid of the uterus. On the right side of the pelvis

the right side of the peritoneal cavity. The right kidney was extended over the base of the peritoneal cavity. The right kidney was extended over the base of the peritoneal cavity. The right kidney was extended over the base of the peritoneal cavity.

[illegible]

Laurel T F Report of Case of Extreme Dilata-
tion of the Uterus. / 1 1

They had in a small room, and a small bed, and
the only thing in the house was a small table and
a few chairs. The room was very small, but it was
very comfortable. The bed was very comfortable, and
the room was very comfortable. The room was very
comfortable, and the bed was very comfortable.

1. The patient had had a long history of the disease.

of the back and abdomen and of the right leg and thigh. At the age of 14 scoliosis of the lower dorsal and the lumbar plex with slight rotation developed.

At examination neither had ey was palpable. The prostate flu did not tender odth vessels were not palp ble. The capacity of the bladder was 4 oz. There was no residual urine. The cervical mucus was moist and glistening. At the perineum the trigone there was slight congestion. The rectal orifices were much enlarged, the right appearing about 1 cm across and the left about half that size. Clother could be easily passed to the had ey.

On a count of the dilution of the ureteral
princes it was evident that fluid introduced to
the bladder could not be taken back. The toscope
therefore removed the bladder was filled th
sodium bromide through catheter and a c
pretero-microgram read

Some of the material in the improved tissue of tubercle bacilli in the urine & by malnutrition of patients found in only one specimen.

Dilation of the ureters may be due to congenital or acquired mechanical cause infection and dilatation of the ureters in early life. The above reported there as no evidence of obstruction at any point of the ureter tract. It is possible that the dilatation of the ureters and pelvis and the traction rigidity and thickening of the bladder wall are the result of a reinfection at the time of the first urinary symptoms. A disturbance of micturition must be considered as a probable biological factor but lack of knowledge regarding the micturition mechanism of micturition prevent certainty on this matter. While it is known that the ureters are affected in infantile pyelitis the exact point of involvement is not known. It is possible that the ureters are involved at the point of insertion thus will explain the symptoms.

Richter J. A Case of Cerebral Enlargement of the
Vertical Tremity of the Right Lateral and H.
The treatment of the non-hal von synther
The case of the non-hal von synther
The case of the non-hal von synther

[illegible][illegible]

Ackner P W Primary Tumors of the Uret
Surg Gynec & Obs 9 xxx 4)

Forty-seven cases of primary epithelial tumors of the ureter collected by the author are grouped as follows: (1) papilloma 12, (2) erythema (3) papillary carcinoma 12, (4) and (5) non papillary carcinoma 14.

In four of the cases of Group 3 the growth was a squamous-cell carcinoma, and in ten a carcinoma solidum seu medullare. The author reports a case of combined squamous cell carcinoma and leucoplakia. Kretschmer has collected forty-four cases of leucoplakia of the urinary tract.

The author's patient was a man 35 years of age. A year and a half ago the onset of symptoms showed low shadow in the right kidney region. The urine showed pus and few red blood cells. Urine from the right ureter showed a large quantity of pus and 1.03 per cent urea content. There was no secretion of indigo, and bacterial cultures were negative. The urine from the left ureter was clearer and more concentrated. Indigo was excreted in 15 to 20 minutes. The urea content was 0.9 per cent. Bacterial cultures were negative. A pyelogram was not made because of the patient's poor general condition.

Thirty per cent of phthalein was excreted in 10 hours. Analysis of the blood showed urea nitrogen 26.6, inorganic nitrogen 74.7, uric acid 4.1 and creatinin 4. The Wassermann test was negative.

At operation the right kidney is found to be the size of a normal kidney. The greatly enlarged pelvis was opened and three stones and several masses of fibrous exudate were removed. The fourth stone was removed through the cortex.

The thickened and structured ureter opened at puncture incision and section removed for examination. On culture, the fluid in the pelvis yielded hemolytic streptococci. Section showed squamous cell carcinoma. Six days later the kidney and ureter were removed by the technique described by Beer.

When the kidney was split, the pelvis was found to be bled. The lower part showed leucoplakia. At the ureteropelvic junction the tumor was circular and 1.5 cm in length. Subsequently radical treatment was given for leucoplakia of the bladder. The patient did not react well and died of uræmia soon afterward.

The diagnosis of ureteral tumors is difficult. If the tumor is mobile and if bleeding occurs from the ureter during the cystoscopic examination the diagnosis is fairly certain. A retrogram may be of aid when the tumor is not mobile. Stricture and calculus must be excluded. If the urine has a bloody obstruction is clear it is suggestive. The persistence of hematuria after the removal of tumor of the bladder is also suggestive. In only four cases in which the tumor was concealed as the diagnosis made before operation.

C D FRIEDMAN, M D

BLADDER URETHRA, AND PENIS

Schwarz, O. Investigation of the Physiology and Pathology of Bladder Function. Remarks on the Pathology of the Vesical Neck. (Ueber die Physiologie und Pathologie des Blasenhalses. Zur Pathologie des Blasenhalses. Zeitschr f urol Chir 9 17)

Dysuria and retention may be present when the prostate is of a large size or smaller and though it is normal structure and shows no signs of relaxation. In such cases a mechanical obstruction to the outflow of urine is ruled out but the constriction of the gland gives complete relief. The author explains this fact by the assumption that mild modes of adhesion exert tonic limitation upon the sphincter which then becomes the immediate cause of the disturbance of function, just as an ulcer on the pylorus constrains the pyloric spasm. The importance of the middle lobe as a cause of mechanical obstruction is greatly overestimated.

The author distinguishes three types of constriction of the neck of the bladder. In the first type there is deposit of newly formed connective tissue immediately under the mucous membrane, which forms a fibrous tight ring around the orifice. The etiology is unknown, but there is neither proof that nor connective tissue infiltration of the sphincter. The second type is characterized by pronounced chronic inflammatory infiltration of the glandular and muscular tissues in addition to the other changes mentioned, the bladder not being transformed into a rigid tube and the mobility of the sphincter limited. In cases of the third type there is hypertonia of the sphincter but the urethra is easily passed by the thickest instruments. This is permanent hypertonia of the sphincter similar to that which often persists after special disease.

The treatment of all of these forms is stretching or the incision or excision of a segment of the sphincter by the transurethral route. This operation is often successful. Frequently the collection can be easily made visible in the cystoscope when the bladder is fully normal, the conclusion may be drawn that this phenomenon has no relationship to relaxation of the sphincter but may be produced in every case by the cystoscope as a reflex excitation of the sphincter. The free communication of the posterior urethra to the bladder is a functional phenomenon, it is not permanent but persists during the examination. Below using the cystoscope it is possible, after waiting for some time to illuminate the posterior urethra for considerable distances and thus to bring the collection into view. The cystoscope exerts an irritating action upon the sphincter causing it to relax.

104 TAPPEINER (2)

Kretschmer H L Thirteen Years of the Bladder. A Further Report. Surg Gynec & Obs 1922 xxx 759

Kretschmer has added nine cases of chronic stricture of the bladder to his series, making a total of four cases. He has reviewed all of his cases to determine

whether the treatment given is justified by the end-results.

The etiology of the lesion is still vague. Of 8 cases collected, including Hünner's fourteen, only twenty-nine were those of males. Twenty three of the latter were reported by Frantz. Five of the author's patients had never borne children. Their ages ranged from 24 to 60 years. Thirteen had had previous surgical operations, nine of which were for the urinary symptoms. The duration of the symptoms ranged from eleven months to seventeen years. All of the patients were thoroughly examined for infections in other parts of the body.

Of the symptoms, two were noted in every case, namely frequency and pain. The pain was constant or present only during micturition. Hematuria was present in six cases and was increased when the bladder was over-distended. Urgency, burning, tenesmus, and backache were variable symptoms.

In thirteen of the fourteen cases accurate records of the urine were obtained. The urine was normal in only one. In seven cases it contained pus. In five cases the urine from both kidneys was sterile, while in three only that from one kidney was sterile. In the others, cultures showed the presence of bacillus coli, streptococci, staphylococci or diphtheroid bacilli. The diagnosis was made by exclusion.

Sections made of all tissue removed confirmed the diagnosis. The mucosa and submucosa were chiefly involved, the muscle very little.

In one of the eight cases operated upon recurrence developed, and in another the urine again showed pus and staphylococci. Two patients are freed of symptoms by fulguration. Two are no longer under observation, and two are improving without treatment.

C. D. PEARCE, M.D.

GENITAL ORGANS

Felbet L. Experiences with the Perineal Operation for Prostatic Abscesses and Prostatic Stones (Erfahrungen mit der perinealen Operation der Prostataabszesse und Prostatensteinen) *Zschr. f. urol. Chir.* 9, 11, 390.

The author reports on the perineal operation in twenty-nine cases of prostatic abscesses and four cases of prostatic calculi (associated twice with vesical calculi). One of the abscesses was tuberculous, twelve were gonorrheal, five were metastatic abscesses (one due to the colon bacillus), one was pure staphylococcus abscess in gonorrhea, eight were abscesses in the hypertrophied prostate following a serious infection of the urinary tract, and three were abscesses following operations for hemorrhoids. The perineal operation was done twenty-seven times and the vesical operation twice.

Twenty-seven cases were cured. One patient died and one result is unknown. The rectum was never injured when the perineal route was used. The fact that this operation is done under direct vision justifies its recommendation. Prostatic tones are also easily removed by the perineal route.

LORENZ (Z)

Leguen: Infections of Prostatic Adenomata (Les infections de l'adénome prostatique) *Arch. d'anal. d. reins et d'organes génito-urinaires* 9, 1, 39.

In the past years Leguen has seen several cases in which the patient showed symptoms of acute retention which were followed in a few weeks by the development of an abscess. A perineotomy was done, but as this did not put an end to the complications arising from the urinary retention, Leguen was obliged to perform prostatectomy in one or two stages. The cause of the retention was infection of a prostatic adenoma.

Infection of a prostatic adenoma occurs in the aged. It differs from gonorrheal infection in young persons. Gonorrheal abscesses evolve in the prostate itself or its immediate neighborhood, the glands being the point of origin. In the aged, a pre-existing adenoma becomes infected as the result of a general systemic infection.

On section the extirpated adenoma shows greenish spots, and drops of pus may be expressed from it. On bacteriological examination various organisms may be found. Two of Leguen's recent cases showed staphylococci.

A common type of case is one in which there is acute retention but the suppuration remains intra-canalicular and localized to the interior of the adenoma. A small induration, the localized abscess, can be felt through the rectum. The only acute phenomena are fever and retention.

Clinically the only difference between a young patient with suppurative prostatitis of gonorrheal origin and an aged patient with adenomatous prostatitis is that the first may recover completely after evacuation of the suppuration and suffers acute retention for only a few days, while the second will not recover and retention will persist because the neck of the bladder is definitely and permanently altered.

The incidence of suppuration in adenomata, as noted by Leguen, was as follows: adenomata weighing less than 20 gm. suppuration in one sixth; adenomata weighing between 20 and 50 gm. suppuration in one fourth; adenomata weighing between 50 and 100 gm. suppuration in three-sevenths; and adenomata weighing above 100 gm. suppuration in one fourth.

Infection of prostatic adenoma is indicated by fever and inequality, incrustations, or indurations in the prostate. Nothing suggests a cancer of the prostate more than inflammation.

Leguen outlines the surgical procedure which he prefers in different types of cases. Whenever there is infection of an adenoma, especially a small adenoma, there are extensive adhesions which render operation very difficult.

W. A. BREVIA

Gaulden, C. L. Traumatic Dislocation of Both Testicles. *California State J. M.* 1922, 22, 390.

In search of the literature Gaulden is able to find only five cases of traumatic dislocation of the testicles.

The case reported in this article was that of a man 33 years of age, the father of three children. While at work as a brakeman on a log train the patient was thrown from the car and pinned between two logs which compressed his abdomen and broke both bones of his right leg in their lower third. Complaint was made only of pain in the groin and the scrotum. In the region of the inguinal canal on both sides masses could be felt which were very sensitive to the touch. The scrotum was enlarged and discolored but without external marks of injury. The testicles had been forced from the scrotum into the inguinal region.

The patient was treated expectantly. On the third day the right testicle was replaced by manipulation without anesthesia but the replacement of the left required the use of ether. The veins of the cord were lacerated and thrombosed but the epididymus and vas were not injured. The patient made an uneventful recovery. *LOUIS GROSS, M.D.*

Sheldon, J. G. and Heller, E. P. A Congenital Defect of the Anterior Abdominal Wall and Cryptorchidism; Report of Case. J. Urology. Sept. 1931. 9: 512, 493.

The patient was a man 24 years of age. Examination revealed swelling in the right lower quadrant, tenderness in the left groin and absence of the testicles from the scrotum. An oblique incision was made over the swelling and in the direction of the fibers of the external oblique muscle. The fibers of the external oblique, the rectus, the conjoint tendon, and the internal oblique were found. The appendix was removed as it showed evidences of disease. The atrophic right testicle was discovered behind the cecum in the retroperitoneal structures. By dividing all the structures except the vas and its artery the testicle was placed in the upper part of the scrotum. The inguinal canal was then closed as in the Ferguson operation, and the abdominal muscles were overlapped and sutured. Except for a little drainage, healing was uneventful.

As this operation consumed considerable time the replacement of the other testicle, which was palpated in the inguinal canal, was left for later operation. *C. D. PICKENS, M.D.*

Lichtenstern, R. The Clinical Aspect and the Treatment of Cryptorchidism (Zur Klinik und Therapie des Kryptorchismus). Dtsch. f. urol. Chir. 9: 85.

The author has found atrophy of spermatogenesis in every case of cryptorchidism in adults. As the endocrine function of the testicles also suffers more or less, the course of time, the development or maintenance of the secondary sexual characteristics is endangered (Tandler and Gross, Kyrie, Lichtenstern). Cochrane and Glanman have shown that the condition can be remedied by early transference of the testicles to the normal position.

On the basis of his own observations, Lichtenstern recommends the correction of unilateral cryptorchid-

ism in childhood. The operation which has given the best results is bilateral fixation of the spermatic cord by means of sutures passed through only the sheath. The best time for the operation is between the eighth and tenth years. *FRANKER (?)*

Bowling, H. H. Radium and Roentgen-Ray Treatment in Metastatic Testicular Tumors. J. Rad. 10: 12, 59.

Since 1917 more than thirty patients with testicular tumors have been given radium and deep roentgen ray treatment at the Mayo Clinic. The majority came with diagnosis of primary cancer of the testicle and few with diagnosis of carcinoma. Most of the diagnoses are based on microscopic examination. The patients were either in good health or markedly underweight and debilitated.

The duration of the disease seems to be of more importance than the size of the tumor. When the patients were seen at the Clinic it was not difficult to determine the chief reason for their complaints and to diagnose metastatic testicular tumor. Most of them stated that they had had testicular tumor removed but that in the course of a few months they developed severe pain in the back, referred down the legs, and some weeks later discovered an abdominal mass.

Given a patient who had a primary tumor of the testicle removed and within a few months complained of symptoms in the upper abdomen and a few months later noted an abdominal tumor, therapeutic test of one intensive radium treatment may make the diagnosis in seven to ten days. If the tumor is testicular in origin it will decrease in size.

The treatment is practically the same for patients with fair or good health and those with poor health. All patients who will live a month or six weeks intensive treatment should be given. The only cases reviewed were inadequately treated. The records show that a course of from 1000 to 4000 mgm.-hrs. of radium was outlined and that one or two areas were exposed to roentgen ray therapy. The patients were instructed to obtain further treatments at home, but in only few instances was this done. In many of the cases the metastatic tumors have disappeared under treatment. The patients seemingly are in good health and have returned to their various activities. Their chance for more lasting arrest of the disease should be greater than that of patients treated in the earlier series.

If the radium and roentgen ray treatments in the region of the growth is reapplied out into areas measuring 3 by 4 cm. and 4 by 6 cm. the number of areas depending on the time of treatment. The first areas treated are small, and when the treatments are repeated the size of the area is increased in order to cut down the possibility of over irradiation of tissues due to scattering. Fifty or 100 milligrams of radium is applied to each area at a distance of

5 cm. The radium is applied universal tube applicators with walls of 5 mm lead and extra filtration 5 mm of lead and 5 mm of rubber. If the body surface to be irradiated is large (from twenty to thirty areas) the amount of irradiation for each area ranges from 700 to 1,000 mms hrs. If there are less than eight or ten areas, 1,000 mms hrs are allocated to each unit. The suprascapular glandular enlargements are packed with radium. The tumor may be divided into 2 to 4 areas. The adjacent skin surfaces are protected with lead and rubber. The number of radium treatments varies. In some cases one treatment causes the metastatic tumors to disappear while in others two to four treatments at intervals of six to eight weeks are necessary.

The present technique takes advantage of the newer ideas of deep therapy. The current is sent through broad focus standard Coolidge tube. The first treatment, practically the entire lymphatic system is exposed in an attempt to decrease the enlargement and destroy any metastatic nodules. The bilateral areas exposed to radium is not treated with the roentgen ray. The adjacent abdominal and lateral walls are mapped out into areas measuring approximately 15 cm. The suprascapular spaces, axillary spaces, and inguinal glandular areas are mapped into areas sufficiently large to insure thorough irradiation. The formula used at present is: spark gap, 31.24 cm.; distance of skin target, 30 cm.; milliamperage, 5; filtration 6 mm. of aluminum and layer of soft leather and time, fourteen minutes. The cross fire principle is used.

The patient should be examined at intervals of two months. If no tumor is palpable treatment should not be resumed. Most patients require from two to four treatments and then rest of from three to four months. When the physical and roentgen ray findings are negative it is safer to treat the symptoms than to wait until demonstrable growth develops. Lumbar pains are usually indicative of enlargements of the deep lumbar glands.

All patients having large or small metastatic tumors but good general health are given intensive irradiation regardless of the pathologic report. Treatment with Coley mixed toxins is not advised when the case is first seen but may be considered if the case proves refractory under radium and roentgen ray therapy.

These patients undergo general reaction as well as local reaction typical of all cases treated with radium and the roentgen ray or various names, omitting and when. If the reaction is not too severe the treatment is continued. As a rule four to six blocks are applied at one time this being repeated on consecutive days until all the areas have been exposed. If treatment is too severe however irradiations are omitted a few days until the patient condition improves. For proper interpretation of the reaction the complete radium treatment must be given and then followed by the roentgen treatment. ALBERT HARRIS, M.D.

MISCELLANEOUS

Pflaumer. Accurate Chromocystoscopy (Laski Chromocystoscopy) *Zucker's urol. Clin.* 9 245

The author injects intracavitary 1 to 5 c.c. of sodium carmine in 15 c.c. of water. The first blue color appears after 10 and once half to four minutes and the greatest concentration is reached after 6 minutes. A careful cystoscopic examination to determine the position of the ureteral openings and possible deviations from the normal must precede the injections. During the observation the beginning of the appearance of the blue color, the greatest concentration, the diminution in the color, the length of the intervals between the spurts of urine, and the extent and force of the spurts must be carefully noted with the aid of a stopwatch. The examination should be made first on the normal kidney and immediately afterwards on the diseased kidney because the phenomena following an intracavitary injection are crowded together in a relatively short span of time. A darkened room and a cystoscope with strong light are prime requisites for the test and the findings should be controlled by a second observation. LASKI (2).

Elliendorath, D. N. Calculous Anuria. Report of Case. *J. Am. Med. Ass.* 9 2, 1912, 2057

Calculous Anuria may result from (1) obstruction of both kidneys or ureters by calculi (2) obstruction of one ureter and loss of function in the other kidney due to disease congenital deformity or reflex inhibition of secretion and (3) obstruction of the remaining kidney after nephrectomy. The following case is of the third type.

The patient, a woman aged 54 years, had had periodical attacks of pain for eight weeks. She showed a small shadow on the right kidney shadow and one in the left. A pyelogram of the right side confirmed the diagnosis of stone. The urine from the right ureter contained larger number of leucocytes than that from the left, and phenol sulphophtalein was excreted in greater quantity and sooner from the right ureter than from the left.

The stone in the right pelvis was removed through pyelotomy incision and the second stone, which was found in the parenchyma, removed through nephrotomy incision. On the sixth day severe renal colic on the left side caused symptoms of shock. Roentgenograms were not satisfactory. During the following twelve hours 8 oz. of urine were voided. The next day cystoscopic examination showed only a few drops in the bladder. The right catheter drained 100 cc. in three hours. The left ureter was completely blocked about midway to the pelvis.

Through an incision in the lumbar portion of the left ureter large impacted calculus was delivered. The urine then increased in amount and reached 100 cc. on the fourth day. Except for local infection recovery was uneventful. C. D. PICKFILL, M.D.

Walker J. T. The Relation of Calcified Abdominal Glands to Urinary Surgery. *Lancet* 9. con 5

During the past few years Walker has examined forty-two cases of urinary disease or supposed urinary disease in which calcification of abdominal glands was found. Calcified glands represented the final stage of tuberculosis of the mesenteric glands, a disease common in children. The literature refers almost exclusively to the active stage of the disease as it occurs in early life. Next to tuberculosis of the bronchial glands, tuberculosis infection of the mesenteric glands is the most frequent cause of disseminated tuberculosis.

In the majority of the cases studied one or two groups of glands were affected. Those most frequently involved were the group lying in the lower part of the abdomen on the right side, but in some cases the glands in the upper part of the abdomen on the left side showed the condition.

Reference is made to the anatomy of the abdominal lymphatics. In 73.5 per cent of the author's cases the glands involved belonged to the ilio-colic group, and in 26.5 per cent, to the mesenteric group. With the exception of three cases, clinical examination revealed no focus of tuberculosis elsewhere, a fact which suggests that infection of the mesenteric glands may be the source of renal infection. The chief interest in calcified abdominal glands from the standpoint of urology lies in the diagnosis and treatment.

In number of the forty-two cases other pathologic conditions were present in addition. There were seven cases of stone in the kidney or ureter, ten cases of pyelitis, and three cases of urinary tuberculosis. One woman was pregnant. In twenty-eight cases no other disease besides the calcified abdominal glands could be detected. In these twenty-eight uncomplicated cases the chief symptom was pain in twenty-five the pain was a prominent feature in four, dull ache, in fourteen an abdominal colic and in seven moderately cut.

The duration of the pain varied from a few minutes to several hours. It was sudden in onset and usually ceased suddenly. In seventy-five per cent comparable to renal and biliary colics and much more severe than the pain of appendicitis. In distribution it resembled moderate renal or ureteral colic. In seventeen cases, the pain of appendicitis in four and biliary colic in one. In five cases it was not defined, and in one there was no pain. Movement had practically no effect in initiating or increasing the pain. Vomiting did not occur. There was no retraction of the testicle and no pain referred to other parts of the body. Disturbance of bowel action was rare. Tenderness as present in four cases. As this was within the appendix area, it was a confusing sign. The author attributes the pain to retort spasm caused by the drag or pressure of the calcareous mass.

Blood was present in the urine in six cases in which no other abnormal condition than the gland calcification could be detected. In one case there was severe intermittent hematuria for eight years as the only symptom. The details of this case are given. Removal of the calcified gland was followed by cessation of the bleeding and restoration to health. The author's experience leads him to believe that there was some relationship between the calcified glands and the hematuria.

The differential diagnoses between the shadows cast by renal and biliary calculi and calcified glands is discussed. Pyelography and lateral radiography combined with pyelography are the best means of differentiating these conditions.

The calcified glands were removed in eleven of the forty-two cases, and in every instance the operation relieved the pain. Such surgical treatment is justified, however, only when the symptoms are severe and due directly to the calcified glands. A paramedian incision is made to the right or left of the umbilicus and care is taken to avoid injury to the superior mesenteric artery and its branches and the numerous veins adhering to the glands.

H. A. FOWLER, M.D.

SURGERY OF THE EYE AND EAR

EYE

Peascheff, G. Preliminary Communication on Injury as Cause of Diabetes Insipidus with Bitemporal Hemianopia. *Brit J Ophth* 9 2, 1, 549

During the World War four cases of wounds involving the chiasm came under the author's observation. One of these is reported particularly because of the development of diabetes. This case was that of an officer wounded over the right eyebrow March 917, by a bomb explosion and unconscious for twenty days following the injury. In the course of month the following symptoms were observed: bitemporal hemianopia, diplopia, polydipsia, polyuria (from 4.5 to 9 liters in twenty-four hours), loss of hair, loss of sexual desire, anhydrosis, staggering gait, marked asthenia, anosmia, deafness of the left ear and loss of sensation with absence of the reflex of the right cornea. Vision was 6/24 in the right eye and 6/9 in the left.

The patient remained under observation for three years. Treatment by electricity and injections of pituitary gland caused improvement in his condition. He became stronger and able to walk well but the bitemporal hemianopia, labyrinthine deafness, and polyuria remained unimproved. The coincidence of bitemporal hemianopia and diabetes insipidus as the result of injury is explained by the assumption that the shock of the injury was conveyed from the right eyebrow to the sella turcica and left petrosal bone, thus causing lesion of the chiasm, the hypophysis, and the left labyrinth.

JAMES P. FERGUSON, M.D.

Doub, H. P. and Carter, J. M. An X-Ray Demonstration of the Nasolachrymal Passageways—Normal and Obstructed. *J Radiol* 9 2, 115

In order to determine the operation of choice in any given case of obstruction of the nasolachrymal passageways, the authors have been using the roentgen ray to obtain a picture of the lumen of the passageway.

An attempt is made first to syringe solutions through the sac and duct into the nose by way of the puncta. This having been done the passageway is injected with Beck's emulsion and oil paste, about 1 cm being used in cases without obstruction, and one half that amount in those with obstruction.

The localization of the obstruction with respect to the surrounding structures is aided by placing a small silver rider over the anterior end of the middle turbinate just below its attachment to the lateral nasal wall. Another method of considerable value consists in outlining the position of the anterior end of the middle turbinate with strips of gum th past

This is easily accomplished by means of a long lachrymal needle. A roentgenogram made in the lateral position will then show how much of the unobstructed passage lies above or below the root of the turbinate and whether the obstruction is in front of the turbinate or behind it.

Following the injection, roentgenograms are made of this region from several angles. The positions which have been found best are the frontal, true lateral, Waters-Waldron, and an oblique modification of the Waters-Waldron.

During the last twenty months the nasolachrymal passages have been studied in about eighty persons, including normal persons and those with obstruction. In the normal persons a number of variations from the generally accepted normal have been found. In some of them the passageway was very tortuous and showed considerable variation in its lumen. Moreover, while usually the sac and duct are joined end to end, there were several cases in which a side-to-side union was found.

Of the cases with definite obstruction a portion of the sac was very much dilated in some, and in others the sac was very small because of abscess formation followed by scar tissue contraction. All grades between these conditions were seen. In a number of cases with symptoms of partial obstruction there were areas of constriction which caused obstruction only when considerable quantity of lachrymal fluid was secreted.

The roentgen plate has been of value in several postoperative conditions. In cases in which short circuiting operation into the middle fossa of the nose has been performed, the exact size of the opening can be noted by this means and a fairly accurate prognosis made as to permanent relief of the symptoms. A number of patients subjected to operations for the removal of the sac later complain that they are able to express pus from the lachrymal fossa. The X-ray shows definitely whether the sac has been removed in toto or in part, and if the latter is the case, how much of the sac remains and its condition. This information is of great value to the surgeon in determining whether enough of the sac is left in place to make feasible a short circuiting operation into the nose or whether it would be better to remove the remaining portion.

ADOLPH HARTUNG, M.D.

Woods, A. G. and Knapp, A. The Diagnostic and Therapeutic Use of Uveal Pigment in Injuries of the Uveal Tract and Sympathetic Ophthalmia. *Bull Johns Hops Hosp* 9 xxiii, 49

In previous article by Woods, clinical and experimental studies on the immune reactions following injuries to the uveal tract were presented.

These showed that when normal healing took place without the occurrence of sympathetic disturbance in the other eye, substances developed in the blood serum which gave positive complement-fixation reaction with an antigen made from the pigment of the uveal tract. On the other hand when normal healing was delayed and sympathetic disturbance occurred in the other eye, this complement-fixation reaction to pigment antigen was absent, and in one case of sympathetic disturbance there appeared to be definite hypersensitiveness to the pigment. There was also evidence leading Woods to the conclusion that the occurrence of this complement fixation reaction indicates the development of immunity to the pigment and gives definite protection against a sympathetic disturbance in the other eye.

The significance of this phenomenon with regard to the prognosis of intra ocular injury involving the uveal tract is at once evident. If the conclusions drawn are correct, the development in the blood serum of a positive complement fixation against pigment antigen would warrant a favorable prognosis and allow the surgeon to leave the injured eye without fear of sympathetic disturbance in the other eye. On the other hand, failure to develop positive reaction could indicate definitely that sympathetic ophthalmia is a complication to be feared and that the injured eye should be removed.

The possibility of using uveal pigment therapeutically in a sympathetic ophthalmia is also manifest. As soon as hypersensitivity is demonstrable, the self-evident course would be to desensitize the patient and then, as a therapeutic measure, proceed either to active or passive immunization.

The numerous reactions associated with intra ocular injuries involving the uveal tract of the eye was made use of in seventeen cases as diagnostic procedure. In ten cases, in which the complement fixation reaction was positive, there was normal healing without any sympathetic disturbance. Of three cases in which the reaction was negative, one showed clinically a malignant sympathetic ophthalmia and two showed definite signs of sympathetic irritation. In three other cases with negative reactions the injured eyes were enucleated as a precautionary measure. The reaction was negative also in two cases of old sympathetic ophthalmia.

The one case of malignant sympathetic ophthalmia showed positive skin reaction to the intradermal injection of pigment. Uveal pigment as used as therapeutic agent. The patient was first desensitized to the pigment and then actively immunized. The effect of this treatment was apparently beneficial.

This case of sympathetic ophthalmia, as that of a boy aged 8 years. The condition developed after an operation for perforated corneal ulcer with prolapse of the iris following gonorrheal ophthalmia. The inflammation was steadily progressive and associated with all the symptoms of the severe type of sympathetic disease despite treatment by diet, intestinal irrigations, pilocarpine sweats, mercury injections, large doses of sodium salicylate and non specific protein therapy. Following desensitization and immunization with uveal pigment, the process was arrested, the eye became white and free from inflammation, and the tension fell to normal. The process continued active for three months but has now been stationary for two months. Vision is 6/60. The eye shows peripheral retraction and slit total adhesion of the iris and capsular opacities. The tension still remains normal.

JAMES P. FERGUSON, M.D.

Kretschmer, R. P. Cataract Extraction with Iridectomy. *Indiana M. Gaz.* 1922, 17, 337.

To counteract the tendency to prolapse of the iris after a simple extraction the following technique is suggested.

After the usual incision in the cornea is made, the iris is picked up near the periphery and radial slit, 1 to 3 mm in length, is made in it with straight sharp scissors. The capsule is then cut and the lens expressed. The slit in the iris permits the contents of the posterior chamber to escape into the wound and thus obviates the possibility of prolapse of the iris. This slit does not heal, but it is scarcely visible and the pupil remains round and central.

Instead of the combined extraction, a complete iridectomy may be performed with extraction. After the corneal incision is made the iris is grasped at the pupillary margin, pulled out of the wound, and incised to the root, but not completely to the periphery. This may be done with little or no pain. The vessels are not cut across as in iridectomy and the resulting coloboma is smaller and more regular.

SURGERY OF THE NOSE, THROAT AND MOUTH

NOSE

Eaver, I. F. S. Metal Inlays and Cobblers' Splint Dressings (Metalleneinlagen und Schiennpflasterbände) *Maschkes med. H. woch.* 9 Jan 54

In some cases it is necessary to incorporate pieces of metal in the flaps used in nasal plastics to obtain the support required as cartilage is apt to become necrotic when subjected to tension and in some instances renders the flaps too bulky. The precious metals are the most desirable for this purpose as they are durable and not affected by the tissues and tissue fluids. Gold with a slight admixture of other metals to increase its elasticity and firmness, is used most frequently, but bronze, aluminum and various dental metals, such as the Victoria metal, are applicable.

In plastics of the face the parts to be operated on must be completely immobilized. This is done best and most simply by means of a cobbler's splint stretched in an arch over the wound, pinned to the cheek or scalp region with mastoils, and fixed with a bandage. The portions of the face which must be brought forward are held in the desired position by leaving the threads loose and suturing them to suitable points on the arch of the cobbler's splint. The cobbler's splint dressing is cheap and easily obtained; it does not exert pressure or slip out of place and it permits easy examination of the wound. The wound is sprinkled lightly with calomel and treated open. When calomel comes in contact with moisture it gives off corrosive sublimates; nascent iodine in dry wounds does not irritate at all.

THORP (2)

Waltz, M. B. Report of Case of Bilateral Frontal Sinus Empyema, Subdural and Subperiosteal Abscess, with Recovery. *Laryngoscope*, 9 xxxii, 966

The author reports an interesting case of bilateral frontal sinus empyema and subdural and subperiosteal abscess in a male 9 years of age. Headache and nasal discharge followed an cut cold which developed about two weeks prior to the first examination.

With the exception of the examination of the head, the general physical examination was negative. The spinal fluid was clear but under great pressure.

There was noticeable swelling of the frontal region extending to the hair line above and to the upper left eyelid below. On aspiration in the frontal region pus was obtained. The nerve head in both eyes was often about 2 diopters.

The plates showed good condition of the sinuses. A smear of the pus showed a typical leucocytic but blood count was 4000.

A Killian incision was made over the left frontal region where a large subperiosteal abscess was found. The left frontal sinus was opened and drained of pus. After the complete exposure of the left frontal sinus, pus was found coming from the right side. The incision was then continued and the right sinus completely uncovered. A necrotic opening was discovered in the left orbital roof. The orbital roof was therefore removed, the thin plates were opened and curetted and a large opening was made into the nose. Pus was then found to be coming from an opening on the floor of the sinus, the left side near the midline. On removal of the inner table a large subdural abscess was discovered. The wound was packed with gauze through the nose and external opening.

With the exception of two convulsions on the eighth day which were probably due to pressure from the gauze packing the postoperative course was uneventful. JAMES C. BRASWELL, M.D.

Husik, D. N. Total Blindness of Both Eyes in a Boy 7 Years of Age Cured by an Ethmoid Operation and Opening of the Sphenoid Sinus. *Laryngoscope* 9 xxxii, 874

The boy whose case is reported became totally blind following a cold in the head with severe hemorrhage. In spite of negative clinical findings in an examination of the nose, the seriousness of the condition seemed to indicate the removal of the major portion of the middle turbinates and curettage of both ethmoids and sphenoids. This was done but evidence of disease was found. The tonsils and adenoids were removed at the same time. Three days after the operation there was profuse purulent nasal discharge. Convalescence then ensued rapidly. Three months after the operation all test showed normal vision.

WILLIAM H. COTTELL, M.D.

THROAT

Lipshutz, B. The Clinical Importance of Ossification of the Stylohyoid Ligament. *J. Am. M. Ass.* 9 Jan 55

Lipshutz reports a case of unilateral complete ossification of the stylohyoid chain which consists of three parts: (1) the stylohyoid process, (2) the stylohyoid ligament and (3) the lesser cornu of the hyoid. In this case unlike others reported in the literature there was no movement whatever between the different segments of the chain.

The clinical importance of this condition lies chiefly in the tonsils as it may interfere with the operation of tonsillectomy or give rise to vague symptoms of discomfort in the throat. Because of

these possibilities the tonsilla region should be palpated before tonsillectomy is attempted. The roentgen ray will reveal the presence of variations in the stylohyoid chain.

As long as the process is directed down and not parallel with the carotid artery no trouble is apt to develop but if it is directed medially, as the result of development or trauma, there may be more or less irritation of the pharynx.

The treatment consists in fracturing the process and removing the distal portion with bone forceps or in rare cases, removing the entire process surgically.

O. M. ROTZ, M.D.

Jackson, C.: Notes on Peroral Endoscopy and Laryngeal Surgery. *Laryngoscope*, 9, 4, April 1919, 363.

The author discusses: (1) bronchoscopy in asthma and asthmatic bronchitis; (2) arachnid bronchitis; (3) benign stenosis of the esophagus; and (4) the diagnosis of foreign bodies in the lungs.

Gottlieb has pointed out that in determining the etiology of bronchial asthma the susceptibility of the bronchial mucous membrane to irritation and the habits and psychology of the patient must be considered. Mental stress must therefore be relieved and the patient kept from contact with persons with respiratory infections. The use of acines and the intrabronchial application of astringents such as silver nitrate and tannic acid are also indicated. Syme reports good results from the repeated use of 10 per cent silver nitrate.

In cases of operation of a peanut kernel which were reported by Chamberlin, Murphy and Lynch the bronchi showed severe inflammation and contained a thick tenacious mucus. Complete removal of the foreign body by bronchoscopy without the use of an anesthetic resulted in cure.

Green reviews the different methods of esophageal dilation and reports eight cases treated through the esophagoscope. M. GROSS, II. CORREIA, M.D.

MOUTH

Pfeiffer, G. E. and Widmann, B. P.: A Case of Tubercular Otitis Treated with Apparent Success by Radium. *Am. J. Roentgenol.* 9, 14, 1916.

Although tuberculous of the oral cavity is comparatively common, search of the literature failed to reveal any cases treated with radium.

In the case reported by the author the lesions first appeared as small punctate areas scattered

about the gum margins of the upper and lower canines and lateral incisors and the left lower molar on both the labial and lingual surfaces. These soon blended, forming irregular serpiginous lines extending well down over the surfaces of the gums and large areas of the left cheek.

The ulceration became progressively more definite and invading, but remained always fairly superficial and showed sharp, red, irregular borders within which were interspersed soft granulations with pinhead spots of yellow and gray and occasionally covered with cloudy films of dirty yellowish serum. The condition caused much irritation and frequent pain.

A 0.5 mgm. plaque of radium covered with gum of rubber was fixed to a wooden tongue depressor and held firmly on as many areas as necessary to cover all of the lesions. The time of application to each area was twenty minutes. Special care was taken to guard against local reaction and destructive effects and to keep it all times within the range of stimulating dose. Seven applications were made at intervals of three weeks. The dose given was between one-third and one-half of skin erythema dose.

After each session the lesions grew paler and the pain decreased. Ultimately all ulceration, irritation, and pain disappeared. About four months later when this report was written there was no sign of recurrence.

ANDREW HARRIS, M.D.

Aueroli: Tuberculosis of the Salivary Glands (La tubercolosi delle ghiandole salivari). *Ann. chir. clin.* 9, 2, 1918.

Aueroli states that our knowledge of tuberculosis of the salivary glands is due to Italian research. In 1893 De Pavio of Perugia reported the first case of tuberculosis of the parotid gland, and in 1895 Aueroli reported the first case of tuberculosis of the submaxillary gland. Since then very few cases of salivary gland tuberculosis have appeared in the literature.

As the condition has no special clinical symptoms, it has been diagnosed as abscess or mixed tumor of the glands.

Tuberculosis of the salivary glands in its typical form may be classed with tuberculomata. It has tendency to fibrous organization.

The few cases collected show that the treatment should be operative and radical. Apparently the granulomata can be removed successfully but in some of the cases reported were the end results known.

W. A. BARNES

BIBLIOGRAPHY of CURRENT LITERATURE

GENERAL SURGERY—SURGICAL TECHNIQUE

NOTE.—The bold face figures in brackets at the right of reference indicates the page of this issue on which an abstract of the article referred to may be found

Operative Surgery and Technique

- Bloodless transplantation W WOLF Muenchen med Wchnsch 923 lxix, 7
An aseptic method of intestinal anastomosis: an experimental study W C BUCKNER and W B McCLELLAN Surg, Gynec & Obst 922, xxv 86 [217]
The use of automatic absorbable metallic sutures and ligatures J S GONZALEZ Md Surgeon, 922, b 620
The formation of knot with instruments K FICKER Muenchen med Wchnsch, 923 lxix, 7
Wound tamponade W A OPPER Verhandl d Russ Chir Piragoff Ges Petrograd, 922
Diminution of postoperative shock by pre-operative de-sensitization J L DICKINSON Am J Surg 92 xxxvi, 393

Aseptic and Antiseptic Surgery

- Inferior vepers in disinfection with tincture of iodine M WICKNER Zentralbl f Chir 923, xlv, 948
Prep'd iodine solution R DITTRICH and A HENNINGSEN Zentralbl f Chir 923, xlv, 950
The pathology of inflammation, with emphasis upon sepsis R A KILLIP N York M J & Med Rec 922, cxvi, 353

Anesthesia

- Respiratory complications after 7000 administrations of general anesthetics D C ALLENHEAD Canad Med J 923, xii 884
Intratracheal modification anesthesia M L A NACH California State J M, 922, xv, 425
Mixed narcosis M KUNZE Zentralbl f Chir 923, xlv, 390
Paravertebral anesthesia in abdominal surgery N H LOWER Illinois M J 922, xlv, 440
Experiences with pleuro anesthesia E PLAYOU Nouv Mag f Legendeval 922, lxxviii, 667
Anesthesia of the splanchnic nerves R GARDUENO and O POTROMONICO Arch ital di chir 923, vi,

- Transversal nerv. block anesthesia in surgery of the pelvic floor and its viscera W R MEINER and E B FRANKER Surg Gynec & Obst 923, xxv 80 [217]
The technique of spinal anesthesia ALAMURRIA I on chirurg 923, xlv, 638
The mortality and serious accidents of lumbar anesthesia M STRASS Deutsche Ztschr f Chir 923, xlv, 396
New applications for local alcoholization T A SICARD Arch de med chir y special 922, x, 49
Scopolamine anesthesia E HOGUE Southwest J M & S 922, xiv, 7
Scopolamine narcosis PAULIA, DRECHTER and TOMSKI Bull et mèm Soc mèd d hôp de Paris, 922, lvi 567

Surgical Instruments and Apparatus

- A hypodermic needle sterilizer and solution boiler J P FLETCHER J Am M Ass 923, lxix, 6
Adjustable finless calipers with immobilized and distensible prongs for traction I E STUM J Am M Ass 923, lxix, 990
A bronchoscopic tack and pin forceps G TUCKER Laryngoscope 922, xcix, 948
A new irrigator providing regulated flow and temperature of contents J C HIRST and W W V DOLAN J Am M Ass 923, lxix, 842
Attachable irrigator stand M M VINCIGER J Am M Ass 922, lxix, 990
A superficial drain H T WALL J Am M Ass 923, lxix, 93
Romanian cauter M THOSTAVITZAI Wratschieboje Dyelo, 923, iii 30
Rectal bander A J CHENOWETH J Am M Ass 922, lxxx 900
A collapsible brometer combining an algometer and manometer to determine tactile sensation, the point test, and superficial reflexes B STROCKY J Am M Ass 922, lxix, 999

SURGERY OF THE HEAD AND NECK

Head

- Craniotomy and fascial transplant for congenital crural cephalic defect H LEIBERMAN Ann Surg 922, lxxvi, 784
Craniotomy for congenital crural cephalic defect and epilepsy H NITZMAN Ann Surg 922, lxxvi, 784
War wounds of the skull and brain M SIKORSKI Ann ital di chir 923, i, 904
Gastrostomy of the cranium CALLO Bol y trab Soc de chir de Buenos Aires, 922, vi, 964

- Injuries of the skull J VID URRUTIA Chir y labor 922, i, 45
Injuries of the facial portion of the skull P ZARIN Turkistan M J 923, i, 43
Fracture with collapse of the arch in the temporoparietal region on the left side: radiating fracture of the base extracranial hematoma due to rupture of the middle meningeal artery C I ALLARVE Bol y trab Soc de chir de Buenos Aires, 922, i, 946
Management of head injuries with real or potential brain damage, with special reference to the value of saturated

Cases of cancer of the breast treated by radiation from 925 to 99 with comments regarding good and poor roentgenotherapy S NORDENFLOTH Upsk f Lager 922, lxxxv, 300

Intensive radiotherapy in case of mammary cancer clinical and histopathologic notes G GELLY L Actino therap, 9 3, 111

Trachea and Lungs

Intratracheal abscess C A CAMPBELL Laryngoscope, 922, lxxxii, 955

The diagnosis of foreign bodies in the bronchi R C LAMAR New Orleans M & S J 9 2, lxxxv, 300

Spontaneous healing of bronchial fistula J P DEAM and R L GILM Wisconsin M J 922 xxi, 70

Spontaneous pneumothorax P J M DOWELL J Am M Am 922, lxxx, 217

Chronic non tuberculous lung diseases W W W KRA Texas St J M 922, xviii, 307

The surgical treatment of pulmonary tuberculosis E ENZLINGER Arch de med chirug y especial 9 2, ix, 498

Indications and contra indications for artificial pneumothorax in pulmonary tuberculosis A E GRIER Texas St J M 9 2, xviii, 400

Personal experience with artificial pneumothorax G B KALL Northwest Med 9 22, 429

Some remarks on pleural shock in artificial pneumothorax UNIVERSITÄT Deutsche med Wchnschr 9 22, 1090

The use of the thoracoscope in cases of artificial pneumothorax S V PRANSKY Lancet, 9 ccm, 273

Pulmonary abscess J W WHITE Texas St J M 922, xvii, 398

Bronchectatic lung abscess operation recovery H M KROEMER and W ALPERT J Am M Am 9 2, lxxx, 590

Hydatid cyst of the lung G M BALBONI Boston M & S J 922, clxxviii, 879 [221]

The minor forms of pulmonary embolism after abdominal operations L R WHARTON and J W PIERCE J Am M Am 922, lxxx, 904

Fatal congestive dyspnoeas in the lung and in the central nervous system due to momentary bodily exertion and their relationship to Pott's pressure congestion E HEDENRÖTH Schweiz med Wchnschr 922 li, 833 [222]

Postoperative pneumonia H LEWIS J Am M Am 922, lxxx, 54

Pulmonary tumors M STRANDBERG Arch de med chirug y especial 922, 2, 5

Gangrene of the lung and salivarian therapy H CHERNOMIRNY Med Klin 922, xviii, 200

Heart and Vascular System

The estimation of cardiac volume by means of roentgenology C R BARNETT Am J Roentgenol 9 2, 8 5

Cervical sympathectomy as means of stopping the pain of angina pectoris V PLATT Am J Surg 922, lxxvi, 300 [222]

Pharynx and Esophagus

Spasms of the esophagus K BUCK Ztschr f Ohrenh 9 lxxvii, 37

Congenital trachea of the esophagus W C A STEPHEN Arch Pediat 9 2, lxxxix, 858

Esophageal obstruction P P VIVROV Canadian Pract 9 2, lxxv, 54

Diverticula of the esophagus V FAUREN Clin y labor 9 3, 5

A case of pharyngo-esophageal diverticulum, operation in two stages, cure E FINOCCHIETTO Bol y trib Soc de chirug de Buenos Aires, 9 2, vi, 925

Multiple cancer formation carcinoma of the vallecula epiglottica and of the esophagus O STRINER Med Klin 922, xviii, 249 [222]

Miscellaneous

A marker for identifying the right and left eye images in stereoscopic chest films P C HODGES Am J Roentgenol 9 2, 751

Three thoracic emergencies G A STEPHENS Lancet, 9 ccm, 382

The thoracoscopy and its practical importance, especially in the surgery of the chest H C JACOBSEN J Iowa Stat M Soc 9 2, xi, 43

Tumors of the mediastinum L SALK Med Clin N Am 922, vi, 89

A case of primary sarcoma of the mediastinum with hemoptyses and metastases extending into the left lung and with involvement of right axillary glands K GORDON Canadian M Am J 922, xi, 897

Investigations on the histologic differentiation of lymphatic mediastinal tumors E J SCHMIDT Arb d Geb d path Anat Baktenol d pathol anat Inst Tschmpen, 92 2, 335

Mediastinal tumor with the results of X ray treatment J C LYER Med Clin N Am 922, vi, 9

SURGERY OF THE ABDOMEN

Abdominal Wall and Peritoneum

Foreign bodies in the abdominal wall J R PLA INSA Writschbehoeg Dydo 922

Exceptional hernia J W WAXLER Indian M Gaz 922, lvi, 45

A rare case of postoperative abdominal intermuscular hernia L N GOLDSCHWARTZ Russ Gynakol Westnik 922 1, 9

Abdominal tumor consisting of the small intestine (thin peritoneal sac) J L BAKER Surg Gynec & Obst 922, lxxv, 829

A case of umbilical hernia with persistent omphalomesenteric duct and intestinal fistula treated by operation O SIEGA Norsk Mag f Lægevidensk 922, lxxvii, 778

Incarceration of an obturator hernia with perforation and the formation of an intestinal fistula on the thigh G RUDERER Mischchen med Wchnschr 922 lxx, 57

A case of cystic degeneration of the mesogastrium (hepatogastric ligament) with torsion of the larger cysts A STRAUSS Zentralbl f Chir 922, lxx, 545

The anatomy and identity of "encysted" and infantile hernia A V MOSCOWITZ Surg Gynec & Obst 922, lxxv, 7 [223]

Diaphragmatic hernia J G WURIE and G B MORSE LANCET Hahnemann Month 922, lvi, 740

Experimental observations on the localization of the palse in the parietal and diaphragmatic peritoneum J A CARP and G H COLLEMAN Arch Int Med 922, lxxx, 778 [224]

A case of pseudomyxoma peritonei. O J J & V
RUSSELL. Nederl Maandb. Geneesk. 925, 12, 4

Gastro-Intestinal Tract

Phases of gastro-intestinal infection, pathology and treatment. G R BATTERLEE. N York M J & Med Rec. 19, 2, 1917, 69

Periga body in the digestive tract. C F ALLREAD. Rev de la Assoc med argent. 192, 229, 633

On the function of the muscles of the stomach some technical experiments. A E HANCLAY. Am J Roent. 1907, 9, 12, 79

Subcutaneous ligament of Murphy button in the stomach. A H HARRIS. Zentralbl f Chir. 9, 2, 121, 1

Isomorph stone in the stomach found in section of the stomach. J LUTHE. Zentralbl f Chir. 9, 2, 121, 69

A case of subcutaneous contusion with rupture of the stomach. G JARIN. Norsk Mag f Læger Vidensk. 9, 12, 121, 54

Koerperkologische Untersuchungen über den Effekt der äusseren und sympathischen Nerven am Magen und Intestine. W KOTZKE and H MITTER. Mitt a d Grenzgeb d Med. Chir. 1922, 225, 267

New position for gastroscopic examinations. W STEIN. Zentralbl f Chir. 9, 2, 121, 49

The pylorus in the gastroscopic picture. W STEIN. Zentralbl f Chir. 1922, 225, 63

The operation for pyloromyotomy in adults. C RANNEY. Zentralbl f Chir. 1922, 225, 370

Coelomic pyloric stenosis. J B G. Arch de med. 1922, 5, 12, 54

The method of treatment of pyloric stenosis at the University of Michigan Hospital. L V HOW. J Mich. M. 1922, 1, 12, 5

Peptic ulcer. K I WILSON. J Radiol. 19, 12, 121, 1221

Peptic ulcer with deformities of the vena, evidenced by the X-ray, changed for the better by treatment. W I. MORGAN. N York M J & Med Rec. 1922, 19, 12, 1221

Ulcer of the stomach and duodenum. T F TOWNE. Contribut. Med. Chir. 1922, 225, 1221

Macroscopic findings in gastric ulcer. J ORATON. Mitt d Grenzgeb d Med. Chir. 9, 225, 12

Observations of the flowing point of blood in gastric and duodenal ulcer and also in gastric carcinoma. A H HARRIS. Wochenschr. 1922, 12, 12, 1221

Circ. ulcer and hypochlorhydria. J J ARNET. Arch. 1922, 12, 12, 1221

The diagnosis and treatment of chronic gastric ulcer. S HARRIS. Wochenschr. 1922, 12, 12, 1221

Does cancer arise in chronic gastric ulcer? W C. MACLEARY. J Am M. Ass. 9, 1922, 928

Peptic ulcer. J B LUTHE. Wochenschr. 1922, 12, 12, 1221

Some valuable reflections on peptic ulcer. G P DEWEY. Med J Australia. 9, 720

Peptic ulcer of the stomach and duodenum. H KOWITZ. Mitt. 1922, 9, 225, 1221

The cause of the recurrent gastric ulcer and of peptic ulcer of the pylorus. L C. TOWNE. Arch de med. 1922, 12, 12, 1221

A case of perforated peptic ulcer. Bol y Inst Soc de ciruj. de Buenos Aires. 9, 2, 12, 1221

Latent perforations of the stomach and intestine. KOWITZ. Wochenschr. d. Geb d. 1922, 12, 12, 1221

The breaking of gastric ulcer. M J STEIN. Rev. M J. 92, 12, 1221

Chronic ulcer, duodenal ulcer and peptic ulcer of the pylorus. Its special consideration of the surgical treatment. H. von HANSEN. Deutsche Zeitschr f Chir. 9, 2, 1221, 1

The surgery of gastric and duodenal ulcer. A WILSON. Mitt d Grenzgeb d Med. Chir. 9, 225, 1221

The surgical treatment of gastric and duodenal ulcer. T. AUSTIN. J. 1922, 9, 12, 1221

Operative methods in perforated gastric and duodenal ulcer. F P. DE. Deutsche Zeitschr f Chir. 9, 2, 1221, 94

Regarding certain operations for lower gastric ulcer. C. GARNIER. Arch. 1922, 12, 12, 1221

The surgical treatment of ulcer of the stomach and duodenum. W. L. 1922. Deutsche Zeitschr f Chir. 1922, 12, 12, 1221

The disadvantages of gastro-enterostomy as an operation for ulcer. O. MAYER. Deutsche Zeitschr f Chir. 9, 2, 1221, 1

Phobias of the stomach. J. LUTHE. Mitt d Grenzgeb d Med. Chir. 9, 225, 1221

Cancer of the stomach. A. W. HARRIS. N York M J & Med Rec. 9, 1922, 634

Prepyloric gastrectomy in extensive cancers of the cardia and the anterior 2/3 of the stomach. A. H. LYON. 1922, 9, 2, 12, 633

Resection of gastric cancer. I. GONZ. J. 1922, 12, 12, 1221

Repeated interferences in gastric cancer. X. DEWEY. and C. DE. 1922, Rev. de Chir. Par. 9, 12, 1221

The non-recurrence of gastric cancer after operation. S. HARRIS. N York M J & Med Rec. 9, 1922, 636

The gastropyloric diagnosis of diffuse hyperplasia of the stomach. W. STEIN. 1922, 12, 12, 1221

The surgery of gastric and duodenal ulcers. J. SCHWITZ. 1922, W. 1922, 12, 12, 1221

A flap incision giving free suprapyloric access to the stomach. LUTHE. 1922, 12, 12, 1221

The influence of the method of suturing upon the healing of operative wounds in the gastric wall, and construction of postoperative peptic ulcer of the pylorus. M. GALL. Arch. f. Chir. 1922, 12, 12, 1221

A new incision for resection of the stomach. K. OURN. 1922, Zentralbl f Chir. 9, 12, 1221

The technique of gastric resection. G. SOUARD. Arch. 1922, 12, 12, 1221

Terminological gastroenterology in the Balfour's method of resection. H. von HANSEN. Zentralbl f Chir. 9, 2, 12, 1221

The importance of vascularization of the ends of the intestine after gastrectomy and colectomy. L. DEWEY. 1922, 12, 12, 1221

A roentgen ray study of the normal intestine. C. COLE and A. TAYLOR. Arch. 1922, 12, 12, 1221

Three cases of perforation of the intestine by fishbones. O. I. STEIN. 1922, 12, 12, 1221

Intestinal infections and toxemia and their biological treatment. N. P. HARRIS and A. A. F. GUTTEN. N York M J & Med Rec. 19, 12, 1221

A contribution to the pathogenesis of pain in intestinal colic and the sensibility of the intestinal wall. F. BATTI. 1922, 12, 12, 1221

Therapeutic certain congenital malformations. L. DALL. 1922, 12, 12, 1221

- Intestinal invagination in infants M R MORENO
Rev Asoc med argent 922, xxiv 603
- Intestinal invagination in children J C V A DER VEE
Nederl T gesch v Geneesk 922, lxxv, 733
- A curious case of intestinal obstruction J B TALLA
Rev españ de ciruj 922, iv 34
- Intussusception L R ELLIOTT Am J Surg 9
xxvi, 307
- A short consideration of some phases of intestinal
obstruction W D HAYES Ohio Stat M J 9 2, xviii,
89
- Laparotomy for intestinal obstruction on board ship
V MOYER Brit M J, 9 2, ii, 977
- Bowel obstruction following operations occurring during
the convalescent period A WATSON and L BROOKS
California State J M 9, xii, 438
- Cytic sarcoma of the small intestine ALONSO
Ball et noten Soc de chir de Par 92, xlviii, 325
- Some observations on the surgery of duodenal mem-
branes, with call to report of the results of treatment
R P CHANDLER Canadian M Ass J 9, xii, 876
- [225]
- The retention mechanism in the duodenum K WATTS
and S KUNZERTS Deutsche med Wochenschr 9 2,
xlviii, 97
- Direct sounding of the duodenum with the aid of metal
instruments and the guidance of the roentgen ray S BORST
and F ELLER München med Wochenschr 92, lxxv,
573
- Congenital duodenal obstruction malrotation of the
intestine report of case B S DRYER Am J Dis
Child 92, xxiv 534
- Duodenal obstruction due to the mesenteric pedicle
P MOOREHEAD Bull et noten Soc de chir de Par 9
xlviii, 37
- T cases of duodenal obstruction in infants R C
JEWELL Proc Roy Soc Med Lond 92, xvi
best Study Dis Child 10 [226]
- Experimental duodenal stenosis and gastric tony
W KÖRWECK Zentralbl f Chir 9 2, xlv, 67
- The therapeutic value of the duodenal tube C D
AUBREY N York M J & Med Rec 9 2, cxvi, 648
- Investigations and observations on ulcer of the duo-
denum H HOLSTENBERG Med Klin 9, xviii, 95
- Two unusual cases of simple round ulcer of the duo-
denum, ad oesophagus L SCHAEFFER München
med Wochenschr, 922, lxx, 93
- The pain of duodenal ulcer A CADE Arch de med
cirug 922, x, 5
- Report of six cases of acute perforation of chronic duo-
denal ulcer W A KIRKLAND Colorado Med 922, xiv,
51
- Duodenal perforations as primary gastro-enterostomy
eventual W DOOLY Med Press 9, cxv 49
- The treatment of carcinoma of the papilla of Vater
P KLEINSCHEIDT Deutsche med Wochenschr 9, xlviii,
97
- The genesis of peptic ulcer of the jejunum R BRA
CAH Arch Mal de chir 9, vi 597
- Peptic ulcer of the jejunum II HARKNER Arch
f Verdauungskr 922, xxvii
- The treatment of jejunal lacer following gastro-enteros-
tomy L URSUTTA Clin y labor 9 2, 47
- Jejunocolic fistula following gastro-enterostomy R
PROCHEROT Bol y trab Soc de cirug de Buenos Aires,
922, vi, 938
- Remission on primary myosarcoma of the small intestine
myosarcoma of the jejunum and healed ulcer of the
duodenum GLAW and ALBRECHT Deutsche med Wochenschr
922, xl, 10, 98
- Cholec notes on case of simple perforating ulcer of the
duodenum ATTERDAY Rev españ de cirug, 922, iv 335
- Enterocolic invagination due to primary lymphosarcoma
of the duodenum J ARMALLO Bol y trab Soc de cirug de
Buenos Aires, 9 2, vi, 580
- The rôle of the traumatic factor in the pathogenesis of
peptic bands and membranes P A D'ACQUINO
N York M J & Med Rec, 922, cxvi, 699
- Enterocolitis C VAN NOORDEN Arch españ de
cirug d par digest 92, v 645
- Classification and surgical treatment of chronic dis-
tributions S G GALT Ohio Stat M J 922, xviii,
83
- Appendicectomy for chronic ulcerative colitis W
MAYER Ann Surg 922, lxxvi, 79
- Appendicectomy in chronic colitis O CHODURA Arch
Mal de chir 9 2, vi, 505
- The treatment of non-malignant affections of the colon
W A LANE, G WATKINS, H M W GRAY II J
PATERSON and WATSON A J Brit M J 9 2, 14 [227]
- Dilation of the cecum G E ARMSTRONG Arch d
Hosp Mém de la Habana, 922, i, 373
- Relationship between ileocolic colitis and arthritis deformans
R SMITH Surg Gynec & Obst 922, xxiv 8
- Further observations with the X ray upon the appendix
A HANCOCK and L J NEWVILLE N Orleans M & S J
92, lxxv 29
- An unusual type of appendicitis PERRIN Lyon
chirurg 922, xii, 570
- Acute appendicitis P GRATTAGNINO N Orleans
M & S J 9, lxxv, 977
- The symptoms and diagnosis of acute appendicitis
A RIVAS Clin y labor 922, 4, 40
- Appendicitis in infants G LANTIERE Segto med 922,
lvi, 33
- Appendicitis and chronic cholecystitis, operation
recovery A PARANI Arch brasil de med 19, 898
- The relation between ovarian varicose veins, appendicitis,
and local eosinophilia of the appendix wall E H EAST
WOOD Brit M J 922, ii, 70
- Hematomas of the appendix A P C ASHURST and
L G WOODS, J J Am M Ass 10, lxxx, 35
- An atypical operation—especially waf subtotal extir-
pation (excision of the tip of the appendix)—in cases of
severe adhesions due to appendicitis J RUCHTER Deut-
sche Zeitsch f Chir 9 2, clxxx, 48 [228]
- The clinical aspects and pathology of primary malignant
diseases of the cecum appendix II M PERRY J
Roy Army Med Corps Lond 922, xxxix, 419
- A technical simplification of ppendix operations devised
by Retti B M TAMBA Riforma med 922, xxxix, 80
- The pre-operative and postoperative treatment for
colon malignancy R F CARTER N York M J & Med
Rec 9 2, cxvi, 630 [229]
- Intestinal resection for gangrene in beral sac after
cholecystectomy BIRALDO Lyon chirurg 922, xii, 613
- T cases of colectomy as an emergency operation
E V MUÑO Semana med 922, xxx, 78
- Total resection of the colon F COLEMAN Deutsche
Zeitsch f Chir 9, clxxx, 365
- An aseptic technique for the resection of the intestine
C F HORTON Ann Surg, 9, lxxvi, 745 [231]
- Aseptic resection of the intestine P K. COLLINS
Ann Surg 9 2, lxxvi, 739 [231]
- Perforating sigmoiditis SA ARNAUD Bull et noten
Soc méd d hôp de Par 1922, xlvii, 19
- The removal of sharp-pointed foreign bodies from the
rectum A A LAYMAN N York M J & Med Rec
922, cxvi, 703

Perforating diverticulum of the sigmoid flexure J
Dunn München med Wchenschr 922, lxx, 785
Prolaps of the rectum T J W TIERE Surg Gynec
& Obst 922, lxxv, 830

Remarks on carcinoma of the rectum E A VANDER
WYK and A M THORNTON Am J Surg 1922, lxxvi, 807
Cancer of the rectum in the presence of 4-7 Wassermann
reactions M GOLD N York M J & Med Rec 92,
cxvi, 706

Involvement of the lymph nodes in carcinoma of the
rectum J R McCA Ann Surg 9, lxxvi, 755 [221]

Resection of the rectum for carcinoma—combined opera-
tion W M YEE Ann Surg, 1922, lxxvi, 795

Constitutional malformation of the lateal-stomach and
imperforate anus W S QUINN Boston M & S J,
92, cxviii, 870 [221]

The hemorrhoid problem S HYMA California Stat
J M 92, xx, 4, 5

The treatment of hemorrhoids by injection K T DE
MAYNO Lancet, 1922, 10

The treatment of proctitis of the anus J BASCH
Therap d Gegen 19, 1, lxxi, 370

Liver, Gall Bladder, Pancreas, and Spleen

The relationship of the functions of the liver and spleen
G EMERY and J BRONCK Bull et infes Soc med d
hop de Par 922, lxxv, 190

A new method of testing liver function with phenolstetra-
chlorophthalen clinical report S M ROSENTHAL J Am
M Assoc 1922, lxxv, 31

The cystic liver as the reostrophogram made xh
the aid of pneumoperitoneum, and observations on the
location of the abdominal cavity with nitrous oxide
W THORNTON Fortschrd d Geb d Röntgenstrahl
lxx, 9, 1922, 367

Congenital obstruction of the bile ducts and congenital
biliary cirrhosis of the liver J K GORDON Boston
M & S J 19, 1, cxviii, 922 [220]

The effect of lymphatic suptent on the liver of
biliary pyemia J C HANSEN N York M J &
Med Rec 9, cxvi, 643

Can the liver drainage of the hepatic duct be replaced
by more complete procedure? The ideal cholecystec-
tomy R GROSS München med Wchenschr 922,
lxx, 1144 [222]

Cholecystocholangiostomy as a substitute for Rube
hepatic drainage II FLORENCE München med
Wchenschr 922, lxx, 43

Degenerative diseases of the liver T B CARTER
Brit M J 922, x, 75

Degenerative diseases of the liver II ROLLAND
Brit M J 922, x, 955

Primary carcinoma of the liver the tropics F P
S. JONES and M STRAUSS Nederlischche Tijdschr
Geneesk 1922, lxx, 3

The relationship of surgery to the diseases of the hep-
atic system LUTHER in Zschr f medil Fortschrd
9, 1922, 5 [223]

A case of toxemia of the gall bladder P ORRICK
Sydney, 9, lxx, 474 [223]

A case of bronchobiliary fistula A G VANCE Brit
M J 9, 7

The escape of bacteria into the biliary tract I FEA ET
Med Abn 9, xvii, 27 [223]

The prognosis and treatment of obstruction of the bile
ducts by hydatids SIVARADO Bull et infes Soc med
d hop de Par 922, lxxv, 8

Autophagic closure of the cystic duct A H HENNA
Zentralbl f Chir, 9, 2, lxx, 377

Cholecystitis T B KERRICK J South Carolina M
Ass, 1922, lxxv, 35

Cholecystitis its relation to infection of the liver and
pancreas W H BARBER N York State J M 922,
lxx, 543

Chronic catarrhal cholecystitis with hydatid deposit
J R CONNERY Ann Surg, 1922, lxxvi, 796 [222]

The pathogenesis of biliary intussus C B SOLER
Sydney med 1922, lxx, 32

The change in the cholesterol content of the blood in
cholelithiasis M BARBEROV Oryon lxx, 922, lxx,
397

A contribution to the study of connective tissue changes
in the gall bladder V D C LARSEN and F A RUTHER
N York M J & Med Rec 1922, cxvi, 640 [221]

Surgery of acute conditions of the gall bladder E B
JONES and W P HILMER Minnesota Med 9, 2,
687

Closure of the abdominal cavity without drainage in
operations on the gall bladder H von HANSEN Dent
sche Zschr f Chir 1922, cxviii, 78

Studies in pancreatic function C W McCLELLAN and
C M JONES Boston M & S J 922, cxviii, 909 [224]

Acute pancreatitis J F CONNORS Ann Surg 1922,
lxxvi, 780

Acute inflammation of the pancreas A SCHULZ Klin
Med 1922, 83

A pancreatic cyst in the left hypochondrium extirpated
H A H BOWMAN Minnesota Med 9, 2, 697 [224]

Primary nodular cancer of the pancreas II I CONNORS
N York M J & Med Rec 1922, cxvi, 704

Hydrops of the entire biliary duct system due to ob-
struction of the pancreas H OBERG Deutsche med
Wchenschr 922, lxxv, 166

Traumatic rupture of the spleen J P CONNORS Am
Surg 1922, lxxvi, 785

Traumatic rupture of the spleen J T BOATON Am J
Surg 1922, lxxvi, 3

A case of traumatic rupture of the spleen L RAC
CAVAL Arch ital di chir 1922, vi, 66

A spleen ruptured at two different times LROMANUS
Zentralbl f Chir 1922, lxx, 71

Enlarged hematoma of the spleen P LOYRANO and
H DOROSCHOFF J de chir, 9, 2, 604 [224]

Splenic embolism O CORVATTO Arch ital di chir
19, 2, vi, 58

Demonstration on the surgical treatment of non traumatic
affections of the spleen J CAMERON E H KETTER, and
K. PALMER Brit M J 922, x, 304

Miscellaneous

The relationship of the surgical abdomen to the chronic
patient E ANDREWS WASHINGTON M J 922, xii, 373

The relationship of abdominal symptoms to the chronic
patient J A LACKEY WASHINGTON M J 922, xii, 364

The clinical significance of studies abdominal pain
A M ROWLEY Boston M & S J 922, cxviii, 844

Rectal cancer carcinoma R FALCONE Arch ital di
chir 9, vi, 192 [223]

SURGERY OF THE EXTREMITIES

Conditions of the Bones, Joints, Muscles
Tendons, Etc.

- Inherited deformities G F KIVLER Brit M J 922, 3
- Bone diseases—osteoporosis or hypoplasia from fixity and non use J C BLOODGOOD J Rachol 9 25
- The pathogenesis of rickets E PATTENSON Proc Roy Soc Med Lond 9 xvi, Sect Study Dis Child
- The pathogenesis of rachitic disturbances of growth and dental deformity H MAASS Arch f Klin Chir 9 crs 704
- Posttraumatic osteomyelitis of the pubic bone J C M BUTLER Med Clin N Am 9 503
- Vaccination treatment in osteomyelitis A B SCHWETZ med Wochchr 9 2, 14 869
- The bases and indications for primary closed closure about drainage in osteomyelitis F K WENZEL Verhändl d Röm Chir Prolong Ges Med Petropgrad, 9
- The roentgen picture and indications for treatment in bone and joint tuberculosis F DE QUERVAIN Schweiz med Wochchr 9 14
- The treatment of suppurative tuberculosis with ultraviolet actinic rays with cold blooded animals A HARRINGS Roshley chur 9 2, 4
- The mathematical and biological middle position of joint S RICHMOND Ztschr f orthop Chir 9 14
- Chronic diseases of the joints other than mycotic and neuropathic conditions G LINDLUNGER Irpden d Chir Orthop 9 xv 304 [235]
- Neuropathic arthritis J H DUNCAN J Am M Ass 9 1017, 957
- Facts and theories explaining the spontaneous origin of joint pain M HARRIS Muscular med Wochchr 9 1017, 957
- Contractures and simulation B MOX VERZEL Moskov M J 9 2, 53
- Patellar ankylosis ankylosis (genua in unum) in the course of appendicitis H F O HAINZEL Ku B Wochchr 9 96
- The theory of the hormone like action of the synovium on the regeneration of tendons I W Zentrallbl f Chir 9 217, 467
- Articular crepitation P JACOB Uptal f Lager 9 2, 1000 07
- Traumatic exostosis of the elbow and by radiation with good result C BORRIS Bull et méms Soc méd d hôp de Paris 9 217, 61
- A case of club hand A MORTON Lancet 9 crs, 1017
- Pseudarthrosis in the arm of children and their diagnostic importance M CORVALLI M ARLE Pedia 9 2, 1017
- Observations on the course the results and the familial occurrence of osteochondritis deformans coracoproximaria W M LILLI Arch f orthop Unfall Chir 9 2, 1017
- Child Legg Perthes disease of the hip osteochondritis deformans juvenalis coracoproximaria L SYMPTON Jussila f Chir medik handl 9 1017, 244
- Lat machine of the great trochanter A RAYZ Wien med Wochchr 9 217, 534
- Remarks on the etiology of subclavicular disease W RYDER Arch f Klin Chir 9 crs 9
- Pathology fct A SCHWETZ med Wochchr 9 2, 1017

- Tuberculosis of the ankle joint and tarsus H J LITZ SIMSON Boston M & S J 9 2, 1017, 867
- Flat foot or pes planus C H ROSE Arch f Hahnemann Month 922, 1 10, 733
- Gaitic neuritis and its relation to flat foot W MARTI Am Med 9 217, 69
- The frequency of congenital clubfoot and congenital dislocation of the hip QUERVAIN Zentrallbl f Chir 9 217, 414
- Remarks on the reports of Deutscheröder and Vogel on an unusual disease of the metatarsus Inflammation fracture? R FILLER Zentrallbl f Chir 9 217, 4 [237]
- The development of arthritic deformities in the metatarsophalangeal joints K WACHENDOER Deutsche med Wochchr 9 217, 530
- A rare case of polydactyly of the foot G H EDWARDS and W B PRINGLE Glasgow M J 9 509
- An old time remembrance of trench foot D M GREY Edinburgh M J 9 217, 307

Fractures and Dislocations

- Ethics in fractures F A HENNINGSEN J I Stat M Soc 9 2, 1017, 405
- Artificial amputation of fracture H C WOODBROT and E C J VES Brit M J 9 2, 1017, 7
- Experiences with the fracture material of Block in fractures and operations on bones P G K BENTZON Hosp Tid 9 2, 1017, 7
- A five year survey of the routine treatment of fractures by operative methods A LUTZ Brit M J 9 2, 1017, 7
- The treatment of typical fractures in infancy A FRACTURE Oxygène, 9 2, 1017, 7
- The temporary plating of fractures of the long bones C H EDWARDS Brit M J 9 2, 1017, 7
- The treatment of ununited fractures of bones C LUTZ Wien med Wochchr 9 1017, 66 [237]
- The treatment of ununited fractures by bridge grafts D DRYER Brit M J 9 2, 1017, 7
- Mistakes in the treatment of fractures H L BRYER J Low Stat M Soc 9 2, 1017, 7
- Fracture of the clavicle W PRINGLE Deutsche Ztschr f Chir 9 217, 7
- Fracture-dislocations of the humeral head W VA H K Boston M & S J 9 2, 1017, 660
- The operative treatment of supracondylar fractures of the humerus W PRINGLE Deutsche Ztschr f Chir 9 217, 7
- Advances in the treatment of the so-called typical fracture of the radius W J KOWARY Med Klin 9 217, 673
- Compression fractures of the lower end of the radius H H BRYER Ann Surg 9 1017, 530 [238]
- Rare and injuries of the distal end of the radius de Chir 9 217, 836 [239]
- Dislocation of the semilunar carpal bone H B K APP J Am M Ass 922, 1017, 69
- The immobilization of the long bones of the extremities in the field in cases of fracture A GREGORY Zentrallbl f Chir 9 217, 25
- Conspicuous subluxation of the hip Osteochondritis coracoproximaria immobilization I CALOT and H COLLIER Wien med Wochchr f Med 9 217, 303 [238]

- Zygomatic epiphyseal fractures (the hip) R. WHELAN *Ann Surg* 1922, lxxvii, 634. [239]
- Immediate operation for fracture of the neck of the femur. A. O. WILSON *Ann Surg* 1922, lxxvii, 65. [239]
- The use of an osteoplastic graft in the treatment of fractures of the neck of the femur. C. DEJANET *Bull et mémo Soc de chir de Par* 1922, xlvi, 266.
- The treatment of patellar fractures. E. FORCUM *Arch de med chir y special* 9, 12, 530.
- A simple apparatus for the treatment of subluxation of the knee in tuberculous inflammation. B. ZACHARIN *Zentralbl f Chir* 1922, xlv, 150.
- Studies on the crucial ligaments and value of the tibial space. C. F. PARVIZ *Hoskiss M & S J* 1922, clxxviii, 705. [238]
- Subluxated dislocation of the foot. B. H. MOORE *Surg, Gynec & Obst* 1922, xxxv, 752. [238]
- A case of bone-in-out of the tibia calcanei. A. MARMON *Wichita Med J* 1922, xlv, 695. [238]
- The treatment of fracture of the body of the calcaneus with attention. W. KATZ *Zentralbl f Chir* 1922, xlv, 14. [238]
- A simple method of treating clubfoot (congenital talipes equinovarus). A. S. B. B. SART *Brit M J* 1922, ii, 115.

Surgery of the Bones, Joints, Muscles, Tendons, Etc.

- Surgery in infantile paratyphoid. M. S. HANCOCK *Minnesota Med* 1922, vi, 706. [241]
- The antiseptic treatment of surgical tuberculosis. M. DIZY *Chir. Orthop. et Par* 1922, lxxvii, 29. [241]
- The surgical treatment of tuberculosis from the standpoint of biology. W. DEGEN *Deutsche med Wochenschr* 1922, xlviii, 28.
- Principles underlying the management of osteomyelitis. V. HANSEN *J Med Am Georgia* 9, 21, 487.
- The treatment of chronic osteomyelitis following gunshot wound of the thigh. A. D. CHESNEY *Verhandl d Russ Chir Pirogoff Ges, Petrograd*, 9.
- The use of large Kirschner grafts in the healing of chronic osteomyelitis. M. R. RICE *Bull Johns Hopkins Hosp* 1922, xxxviii, 286. [242]
- The above of osteomyelitis. A. MONTAGNI *Presse méd Par* 9, supp 2034.

- The cartilaginous and bony proliferations caused by fixed grafts of cartilage and bone. B. POLSTINE *Arch Ital de chir* 1922, vi, 73.
- The conservative treatment of prosthesis. H. MAYER *Deutsche Ztschr f Chir* 1922, clxxvii, 278.
- The permanent effect of slight force in the treatment of contractures (Querschnitt method). P. MONOD *Ztschr f Orthop Chir* 1922, xlv, 3.
- The treatment of paronychia. W. HICKLEY *Minnesota med Wochenschr* 1922, lxxvii, 255.
- Tuberculosis of the sheath of the flexor tendons of the forearm and hand—radical extirpation. W. MAYER *Ann Surg* 1922, lxxvii, 79.
- Arthroplasty of the elbow. W. C. CAMPBELL *Ann Surg* 1922, lxxvii, 65. [242]
- The end result of an Albee graft in case of paronychia with loss of substance in the lower third of the radius. F. MONT *Bull et mémo Soc de chir de Par* 1922, xlvi, 21.
- How has the Sauerbruch procedure stood the test in cases of amputation of the arm. P. JORTSCHEW *Medisches med. Wochenschr* 1922, lxxvii, 255.
- Extra-articular arthroplasty of the hip (pegging of the hip). J. HANSEN *Zentralbl f Chir* 1922, xlv, 406.
- A case of destruction of the hip. A. GERRA *Rev de med y chir de la Habana* 9, xxvii, 7.
- Wounds of the knee. H. MONOD *Presse méd Par* 1922, xxxv, 661. [242]
- Arthroscopy for chronic arthritis of the knee. H. NORD *Ann Surg* 9, 2, lxxvii, 76.
- A new approach to the meniscus cartilage. P. W. ROBERTS *J Am M Ass* 1922, lxxvii, 2102. [242]
- The fascial bundle, an operative procedure for the prevention of pathological internal rotation of the leg. I. ROBERTS *Ztschr f Orthop Chir* 1922, xlv, 371.
- The surgical treatment of muscle hernia of the tibial space. E. HANSEN *Verhandl d Russ Chir Pirogoff Ges Petrograd*, 9.
- The diagnosis and treatment of flat foot. E. S. HAYES *N Orleans M & S J* 1922, lxxvii, 394.
- The Klapp method of arthrodesis for foot joints. O. STARK *Zentralbl f Chir* 1922, xlv, 24.
- Amputations and prostheses. W. RICHARDSON *Monks M J* 1922, ii, 17.
- The Genu suspension in insurance medicine. L. H. ARCH *f Orthop & Unfall Chir* 1922, xx, 49. [242]

SURGERY OF THE SPINAL COLUMN AND CORD

- Puncture of prevertebral abscess. F. SCHNEIDER *Monatschr med Wochenschr* 1922, lxxvii, 779. [244]
- Cervical ribs. KROH and MYER *Deutsche med Wochenschr* 1922, xlviii, 973. [244]
- Suppurative osteomyelitis of the vertebral column. O. STARK *Arch f Klin Chir* 1922, cxx, 630.
- Tuberculous spondylitis. T. H. OCHS *Proc Roy Soc Med Lond* 1922, xvi, Sect Orthop. [244]
- Rheumatic spondylitis—spondylitis deformans. G. E. SCHNEIDER *Ugeskr f Læger* 1922, lxxvii, 93. [244]
- The differential diagnosis between the beginning of tuberculous spondylitis and chronic rheumatism of the laminae of the back. C. MAT *Monatschr med Wochenschr* 1922, xlv, 45.
- The pathogenesis and treatment of tuberculous spondylitis. F. LOEWEN *Ergänz d Chir Orthop* 1922, xv, 30.
- A case of Pott's disease associated with injury. F. B. HOBBS *Lancet* 1922, cxxvii, 383.

- Bony bridging in tuberculous of the spine. R. B. COFIELD *J Am M Ass* 1922, lxxvii, 97. [245]
- Operative immobilization of the spine in tuberculous spondylitis. W. N. SCHWARTZ *Verhandl d Russ Chir Pirogoff Ges, Petrograd*, 9.
- The operative treatment of scoliosis. S. KATZ *Arch Surg* 1922, 61. [245]
- The necessity for an immediate and thorough roentgenological study of all injuries to the spine. H. W. CARRUTHERS *California State J M* 1922, xx, 436.
- The pathologic anatomy and clinical aspect of spine biliary osteitis based on autopsy findings in the newborn. J. VON FRICK *Dissertation*, 1922.
- The osteitis, pathology, and treatment of spine biliary osteitis and its sequelae. M. HANSEN *Monatschr med Wochenschr* 1922, lxxvii, 259. [246]
- A tuberculous tuberculosis of the cervical cord. C. URSCHIA *N. E. J. Bull et mémo Soc méd d hôp de Par* 1922, xlvi, 1497.

SURGERY OF THE NERVOUS SYSTEM

- The trend of neurological surgery C H FRANK
J Indiana M Ass 922, xv, 405
- A histologic study of Nureotti nerv hetero-transplantation A POUSSARD and R LEBERRE Lyon chirurg 922, xii, 544
- The use of cauterization neuromatoma of the small branch nerves in the pathology of the limbs and viscera R LEBERRE Lyon chirurg 922, xii, 550
- Unilateral division of the phrenic nerve in angulitis J OELLER Muenchen med Wchschr 922, lix, 344
- Injuries of the nerves of the arm H ANGRABER Ugrsk f Leger 922, lxxxv, 205

- Excrase golf followed by neuroleptical palsy C C WOODRUM J Am M Ass 922, lxxx, 2000
- Lat nature of the brachial plexus II. NICHOLSON Ann Surg 922, lxxvi, 783
- The technique of nerve suture O LANGENBAUM Zentr f Chir 922, xlix, 53
- The physiological effect of extirpation of the peri-arterial sympathetic nerve plexus I B OTTINO and O S ANTILAN Wchschr 922, x, 402
- Paralysis and stimulation of the nerves in the pathogenesis of loss or decrease of nerve function by disease or extirpation of the nerves, especially in spina biala occulta F BRUTINIO Klen Wchschr 922, xxxiv, 694

MISCELLANEOUS

Clinical Entities—General Physiological Conditions

- Recent progress in physiology P G STILES Boston M & S J 922, x, 835
- The role of oral focal infection in general medicine C E ELLIS Dental Cosmos, 922, lix, 308
- Surgical aspects of endocrinology W D G RICE J Indiana State M Ass 922, xv, 433
- The surgical emergency J H GORDON Internat J S 922, xxxv, 42
- Adenoma E GÓMEZ Report de med y cirug 922, xii, 667
- Hydatid cysts J SALADOR Semana med 922, xii, 947
- Posterior microcystic dermoids of cysts M E STOUT Southwest J M & S 922, x, 6
- Changes in the blood in cases of scurvy treated by the X rays G SPANGLIO Actinoterapia, 922, 369
- The treatment of carbuncle J SAVOIA Arch de med chirug y especial 922, ix, 45
- The treatment of carbuncle E M TLOS Arch de med chirug y especial 922, 9, 07
- A case of abscess caused by the introduction of mercury under the skin SHERJUKOFF Dentische Zischr f Chir 922, lxxxv, 25
- Gonorrhea of the forehead with ringworm report of case H. GONZALEZ J Am M Ass 922, lxxx, 2000
- Gonorrheal lymphoma 1 cases O CLARK Brazil med 922, lxxxv, 400
- A palmar muscular cavernoma of unusual situation L. CAYRANO Polichia 922, xix, 654
- A lipoma weighing 14 kgrs taken from the inner aspect of the right arm. A D KIR Boston M & S J 922, x, 956
- Lipoma of the perineum F W. RA KIR and A J SCHOLL J Am M Ass 922, lxxx, 2004
- New attempts to procure immunity to malignant disease in man S KIRK Canadian M Ass J 922, xii, 84
- The physical chemistry of carcinoma N WATSON Zischr f Krebsforsch 922, xix, 212
- The present status of research regarding the experimental production of cancer the results of this research, and the problems arising from them J FRICKER Acta chie Scand 922, lv, 243
- The production of cancer by specific forms of irritation J A MIERA Brit M J 922, x, 3
- Protonema defers as the primary cause of malignancy H B F VV. Illinois M J 922, xli, 445

- Epitheliomatous ulceration in industry T M LROGE Brit M J 922, x, 12
- Paraffin cancer and its experimental production A LITTLE Brit M J 922, x, 04
- Experimental production of cancer by arsenic A LITTLE Brit M J 922, x, 07
- Tar cancer in mice G ROBERT R LITTLE, and E. PETER Præmed Par 922, x, 06
- On the occupation cancer of the paraffin and oil workers of the Scottish shale oil industry A SCOTT Brit M J 922, x, 08
- Experimental root cancer R D PARRY Brit M J 922, x, 04
- The cancer problem in South Dakota F KERRY J Lancet, 922, xii, 603
- Malignant tumors in arm countries C GONZALEZ Dentische med Wchschr 922, x, 21viii, 54
- The relation of the general practitioner to the cancer problem A L SMITH Med Press, 922, civ, 495
- Cylindroma B ANGLERO Arch ital di chir 922, 53
- The treatment of malignant postule (carbuncle) by intra cancer sections of neosalvarsan E A S DE AJ and J D LA PUERTA Siglo med 922, lxx, 5
- Irradiation and cancer I URR Prog de la clin Madrid, 922, xii, 45
- The surgical aspect of cancer C BLACK J Radiol 922, xi, 57
- Bleclache W DAMERON Boston M & S J 922, lxxxv, 830
- The treatment of gangrene of the leg of arterial origin G JEA NIXEY Arch de med chirug y especial 922, x, 56
- Histologic changes in the internal organs and their relation to fatal gas gangrene F F SASSOJETT Staats erlag, Petrograd, 922, iv, 244
- A case of atrophic gangrene due to burning with copper sulphate M THAL Zischr f aertid Fortbild 922, xii, 399
- Sera, Vaccines, and Ferments
- A new principle of therapeutic immunization S WAGNER Med Press, 922, civ, 49
- Bacteriotherapy in acute localized infections R. PELLIS Bull et mem Soc med d hôp de Par 922, xiv, 5
- The use of antipneumococcal serum in the treatment of the complications of gonorrhea A S WALLACE Med J Australia, 922, ii, 73

The use of instrumental examination of the arterial system in the treatment of arteriosclerosis. *Am J Surg* 1934, 47, 127.

Blood

Observations upon the blood stream. *N Y J Med* 1934, 34, 118.

On the medico-legal importance of the blood groups. *Q J Med* 1934, 27, 127.

The influence of diet on blood groups. *J Intern Med* 1934, 19, 127.

Blood destruction during exercise. Blood changes occur first in the course of a single day of exercise. *G O J Med* 1934, 2, 127.

Role pigment in the blood. *M J Conn* 1934, 19, 127.

The cholesterol content of the blood is an index of its relation to atherosclerosis. *W J Med* 1934, 19, 127.

A working hypothesis as to the cause and cure of pericarditis. *Am J Med* 1934, 19, 127.

Chemical changes of the blood after the influence of direct morphine. *Am J Med* 1934, 19, 127.

Thrombosis due to effort. *Q J Med* 1934, 27, 127.

Endothelium of the brachial artery. *J J Conn* 1934, 19, 127.

Blood and Lymph Vessel

Present view regarding high blood pressure. *Am J Med* 1934, 19, 127.

Some considerations on blood pressure. *J N Y Med* 1934, 34, 118.

Arterial aneurysm. *J J Conn* 1934, 19, 127.

The causes and treatment of high blood pressure. *Am J Med* 1934, 19, 127.

Arteriosclerosis and hypertension. *J N Y Med* 1934, 34, 118.

A case of intraperitoneal aneurysm of the aorta. *Am J Med* 1934, 19, 127.

A case report of ductless aneurysm of the aorta. *Am J Med* 1934, 19, 127.

The diagnosis of perforation of the aorta and the superior vena cava. *Am J Med* 1934, 19, 127.

A case of retroperitoneal rupture of the abdominal aorta. *Am J Med* 1934, 19, 127.

A case of aneurysm of the abdominal aorta. *Am J Med* 1934, 19, 127.

A case of aneurysm of the abdominal aorta. *Am J Med* 1934, 19, 127.

A case of aneurysm of the aorta. *Am J Med* 1934, 19, 127.

A case of aneurysm of the aorta. *Am J Med* 1934, 19, 127.

Operation for varicocele. *Am J Med* 1934, 19, 127.

Internal aneurysm of the aorta. *Am J Med* 1934, 19, 127.

Transcatheter rupture of the femoral artery. *Am J Med* 1934, 19, 127.

Surgery of the arteries. *Am J Med* 1934, 19, 127.

Surgical Diagnosis, Pathology and Therapeutics

The relationship between clinical laboratory and the physician. *Am J Med* 1934, 19, 127.

The significance of the clinical chemistry for surgery. *Am J Med* 1934, 19, 127.

The chemistry and economically diagnostic laboratory. *Am J Med* 1934, 19, 127.

Correlation of physiology and surgery. *Am J Med* 1934, 19, 127.

Correlation of pathology and medicine and surgery. *Am J Med* 1934, 19, 127.

Physiology of the dermoplasty of pathology. *Am J Med* 1934, 19, 127.

The diagnosis of the dermoplasty of pathology. *Am J Med* 1934, 19, 127.

The diagnosis of the dermoplasty of pathology. *Am J Med* 1934, 19, 127.

The diagnosis of the dermoplasty of pathology. *Am J Med* 1934, 19, 127.

The diagnosis of the dermoplasty of pathology. *Am J Med* 1934, 19, 127.

The diagnosis of the dermoplasty of pathology. *Am J Med* 1934, 19, 127.

The diagnosis of the dermoplasty of pathology. *Am J Med* 1934, 19, 127.

The diagnosis of the dermoplasty of pathology. *Am J Med* 1934, 19, 127.

The diagnosis of the dermoplasty of pathology. *Am J Med* 1934, 19, 127.

The diagnosis of the dermoplasty of pathology. *Am J Med* 1934, 19, 127.

The diagnosis of the dermoplasty of pathology. *Am J Med* 1934, 19, 127.

The diagnosis of the dermoplasty of pathology. *Am J Med* 1934, 19, 127.

The diagnosis of the dermoplasty of pathology. *Am J Med* 1934, 19, 127.

The diagnosis of the dermoplasty of pathology. *Am J Med* 1934, 19, 127.

The diagnosis of the dermoplasty of pathology. *Am J Med* 1934, 19, 127.

The diagnosis of the dermoplasty of pathology. *Am J Med* 1934, 19, 127.

The diagnosis of the dermoplasty of pathology. *Am J Med* 1934, 19, 127.

The diagnosis of the dermoplasty of pathology. *Am J Med* 1934, 19, 127.

The diagnosis of the dermoplasty of pathology. *Am J Med* 1934, 19, 127.

The diagnosis of the dermoplasty of pathology. *Am J Med* 1934, 19, 127.

The diagnosis of the dermoplasty of pathology. *Am J Med* 1934, 19, 127.

The diagnosis of the dermoplasty of pathology. *Am J Med* 1934, 19, 127.

The diagnosis of the dermoplasty of pathology. *Am J Med* 1934, 19, 127.

The diagnosis of the dermoplasty of pathology. *Am J Med* 1934, 19, 127.

The diagnosis of the dermoplasty of pathology. *Am J Med* 1934, 19, 127.

The diagnosis of the dermoplasty of pathology. *Am J Med* 1934, 19, 127.

The diagnosis of the dermoplasty of pathology. *Am J Med* 1934, 19, 127.

The diagnosis of the dermoplasty of pathology. *Am J Med* 1934, 19, 127.

- post-mortem tract I LUDWIG J Am M Ass 9
1924, 3074 [249]
Radium combination therapy I GUDERMAN M
Wichita 9 2, 1, 653
Treatment of malignant disease by radium the X ray
and electrocoagulation G F FRANKLIN Internat J
Surg 922, XXXV 4 3

Hospitals: Medical Education and History

- Hospital records R C KNOWLEDGE and G RACE
Canadian Pract 9 XLIV, 536
The present status of surgery and the hospitals in
South Georgia A D LITTLE J Med Ass Georgia 9
21 47
Full time clinical departments G DOCK South M J
1924, XV 3
Lady anatomical instruction at Edinburgh J D
COWAN Edinburgh M J 92 XVI 71
The use of full time teachers in clinical medicine G C
ROBERTSON South M J 9 XV 000

- Postgraduate medical study in Louisville I F HORN
Kentucky M J 9 XV, 86
Concerning university extension postgraduate medical
work C H M RE PENNSYLVANIA M J 92 XVI
40
Changes that have occurred in the past twenty five
years having an effect on the progress of medicine A W
MASTERS Boston M & S J 9 XLVIII, 82
Lord Foster and his priceless gift to man J A H
REMY J Med Ass Georgia, 10 XI 473
The progress of surgery and the rise and fall of surgical
operations J BRINK Internat J S 9 XXXV 435
Some outstanding features of recent progress in surgery
G THORNTON California Stat J M 92 XX, 43

Legal Medicine

- The medicolegal application of human blood groupings
Sources of error in blood group tests, and criteria of reli-
ability in investigations on heredity of blood groups
R OTTENBACH J Am M Ass 9 2, 1924, 37

GYNECOLOGY

Uterus

- Retroversion of the uterus M DALCHÉ Prog de la
Sci Madrid 9 2, XIV 320
The present status of the surgical treatment of uterine
prolapse F C WITMER J Michigan State M Soc 9
XX, 505
An improved method of supporting the bladder and
vagina after vaginal hysterectomy for procidentia A
HARRINGTON Am J Obst & Gynec 9 2, IV 634 [250]
Restoration of the round ligaments A J NEULAND
Brit M J 92 11, 8
Hemorrhagic metropathies A CASTANO Seman
med 923, XXX, 45
Lat uterine syphilis and metrorrhagia J M CHOTTE
Rev franç de gynéc et d'obst 9 3, 14, 9
The use of radium in the treatment of uterine bleeding
other than cancer H B MATTHEWS N York Stat J M
923 XII, 356
The relations of terrene myomata and the structure
of the female genital organs A ROSSIGNOL Gynéc et obst
923 VI, 305
Five specimens illustrating retrogressive changes in the
breasts associated with pregnancy F LUTRA J Obst &
Gynec Brit Emp 9 9, XIV 630
Statistics and technique in the treatment of fibromyoma
of the uterus by radiotherapy J A CORRADINO Am J
Roentgenol 9 2, 12, 8 [251]
What is the best method for the treatment of uterine
fibromyomata by means of the roentgen rays? M DECHERIE
Am J Roentgenol 9 2, 14, 707 [251]
Uterine fibromata requiring operation VITALAZA Med
liber 9 3, VI, 4
The scope and technique of myomectomy V BOWEN
Proc Roy Soc Med Lond 9 2, XVI, Sect Obst &
Gynec
The indications for and the results of, myomectomy for
sterile fibroids A E GILLES Proc Roy Soc Med
Lond 9 2, XVI, Sect Obst & Gynec 3
A large fibroid of the cervix developing after subtotal
hysterectomy A E GILLES Proc Roy Soc Med Lond
923 XVI, Sect Obst & Gynec
Superficial cerclage H HARTMANN Gynéc
et obst 923 VI, 77

- Observations on cancer of the uterus L D VAN RHODE
Island M J 92 333 [251]
Transverse myelotomy for pelvic neuralgia due to in-
operable terrene cancer LAURENCE Lyon chirurg 9
XI, 6, 7
Technical questions in the roentgen treatment of car-
cinoma of the uterus P DEL BOONO Actinoterapia, 923,
III 57
Curatherapy in cancer of the uterus F MACALUSO
Rev franç de gynéc et d'obst 923, 467
The surgical interest of the hypogastric ganglion and
nerves of the uterus A LATARJET and P ROCHER Lyon
chirurg 9 2, XIV, 503
Repetal anastomosis of the uterus C COTTE Presse
med Par 9 3, XVI, 56

Adnexal and Peri Uterine Conditions

- Acute and chronic salpingitis and treatment J L
SAYLOR J Oklahoma State M Ass 9 XV 355
Pyosalpinx opening into the urinary bladder operation
curé LUTENSCOV Spitzahl 9 XI 204 [252]
Tuberculous salpingitis opening in the bladder G TIER
Lyon chirurg 923 XII 630
The Rhesus test and its therapeutic application J C
HINK and C MARKE Am J Obst & Gynec 9 2, IV,
048 [252]
Does the ovarian corpus luteum control the ovarian and
uterine cycle H SCHILLER Am J Obst & Gynec 923,
IV 6 [252]
A persistent corpus luteum cyst as the cause of hypertrophy
of the lining of the uterus A H CURTIS Surg Gynec
& Obst 9 2, XXXV 830
Adenocarcinoma of the ovary E W BRIDGES Texas
State J M 923 XVIII, 35
Fibroma and sarcoma of the ovary A report of two
unusual ovarian tumors J V MASON Boston M & S J
923, XLVIII, 953 [253]

External Genitalia

- Hydrometra associated with absence of the vagina and
genital tuberculosis D DOUGAL J Obst & Gynec Brit
Emp 9 2, XVI, 634

- The formation of aponeurosis in congenital anal malformation. ROSENTHAL. *Monatshchr f Geburtsh Gynaek* 922, 1921, 76 [253]
- The formation of an artificial anus. ROSENTHAL. *Zentralbl f Gynaek* 19, 1921, 50 [254]
- Vagina infra septa. Supra simplex. S. M. LA. *Br J Obst Gynaec* 19, 1921, 5 [255]
- Uterovaginal fistula with early and severe history. Infestation. P. TEL. and TRÉVÉNOT. *Lyon chirurg* 9, 1921, 176
- Utero-vesico-vaginal fistula. H. BELLOCK. *Med J Australia* 9, 2, 1921, 709 [256]
- Rectovaginal adenocarcinoma with chronic endometritis. A. N. KRAVITSKY. *Med J Australia* 9, 2, 1921, 642

Miscellaneous

- Levator hernia (podental hernia). report of case operated upon by the combined row. review of 14 previously reported cases. H. C. CHASE. *Surg Gynec & Obst* 9, 1921, 77 [257]
- A case of unilateral interstitial ectopic pregnancy, and karyosynthesis. C. F. FORTSON. *J Obst & Gynec Brit Emp* 922, 1921, 643
- Abdominal hernioplasty prevents treatment. J. DREYER. *Scand Med* 9, 1921, 3

- Menorrhagia in young girls. G. LIA. *Lancet* 1921, 26
- The diagnosis of sterility in women. M. J. Gault. *M J* 9, 1921, 60
- The advantages of gas infusion in obstetrical diagnosis with especial reference to its use in the study of the causes of sterility. R. Canadian. *M Am J* 9, 1921, 893
- Severe genital neuralgia treated by rectal hypogastric plexus. MACCLARKE and ACTON. *Soc med de hôp de Par* 9, 2, 1921
- Laparotomy through the inguinal canal. mucinoma. G. L. hypobol operation. W. GARDNER. *Albuquerque* 9, 2, 1921, 9
- A contribution to the statistics of carcinoma of the uterine cervix. M. T. M. LIA. *Zacher f Gynaek* 9, 1921, 66
- The treatment of cancer of the pelvic organs. G. G. CHASE and F. F. L. K. *Koenigsberg* 9, 1921, 10
- Endo-urethral and endovaginal treatment. J. R. R. *Rev de la Assoc med argen* 1921, 18
- The postoperative infection of milk sole abdominal cavity. A. S. *Centralbl f* 9, 2, 1921, 474

OBSTETRICS

Pregnancy and Its Complications

- The management of sterility. W. D. CHAMBERLAIN. *Br J Obst Gynaec* 1921, 1921, 415
- The treatment of the condition of pregnancy. I. CHAMBERLAIN. *Arch de med chir* 9, 1921, 458
- Concerning the vomiting of pregnancy and its treatment. A. G. CHAMBERLAIN. *Minnesota Med* 19, 1921, 60
- Gestational and tuberculous. L. R. R. *Am J Obst* 1921, 1921, 474
- Pregnancy after operation for cancer of the breast. L. R. R. *Br J Obst Gynaec* 1921, 1921, 474
- Hepatic insufficiency and pregnancy. R. M. R. *Br J Obst Gynaec* 1921, 1921, 474
- Pyelitis in pregnancy and the postpartum. J. A. H. *Br J Obst Gynaec* 1921, 1921, 474
- Notes on three cases of chorion praevi. L. J. MACCLARKE. *J Obst & Gynec Brit Emp* 922, 1921, 630
- Pregnancy complicating heart disease. L. B. PARKER. *N York Med J* 9, 1921, 584
- The incidence of miscarriage in private obstetrical practice, with discussion of the pathology. J. L. H. *Br J Obst Gynaec* 1921, 1921, 474
- Placenta previa in double term, cesarean section recovery. W. G. LIA. *J Obst & Gynec Brit Emp* 9, 1921, 644
- Antepartum hemorrhage in details of pregnancy. F. L. S. *Br J Obst Gynaec* 1921, 1921, 474
- Cullen's sign in ectopic pregnancy. suggestion for its determination. F. H. J. *Am J Obst Gynaec* 1921, 1921, 474
- The importance of the history in the diagnosis of tubal pregnancy. E. L. K. *N Orleans M & S J* 1921, 1921, 474
- Unilateral tubal pregnancy (laparotomy) double abdominal recovery. L. D. *Austral Gynaec & Obst* 1921, 1921, 474

Labor and Its Complications

- Pelvic measurements by the X-ray. A. S. G. *Gynaec & Obst* 9, 1921, 83
- Is the usual method of preparing pain beneficial or necessary? R. A. J. *Am J Obst & Gynec* 19, 1921, 61
- Anesthesia in obstetrical practice. R. J. *Br J Obst Gynaec* 1921, 1921, 474
- Further experience with primary extraction of labor. B. F. W. *Am J Obst Gynaec* 1921, 1921, 474
- Is interference justifiable after a labor. L. R. R. *Br J Obst Gynaec* 1921, 1921, 474
- The test of labor in relation to cesarean results obtained by cesarean and those based upon personal experience of R. W. H. and L. B. *Am J Obst Gynaec* 1921, 1921, 474
- Cesarean section. indication. W. G. LIA. *Br J Obst Gynaec* 1921, 1921, 474
- Further experience with the two-flap cesarean section. L. C. B. *Br J Obst Gynaec* 1921, 1921, 474
- The technique of low incision. G. LIA. *Br J Obst Gynaec* 1921, 1921, 474
- Uteroparietal fistula connected cesarean section. R. L. *Gynaec & Obst* 1921, 1921, 474

Puerperium and Its Complications

- A case of uterine infection following cesarean section. G. LIA. *Br J Obst Gynaec* 1921, 1921, 474
- Puerperal uterine infection. recovery. G. LIA. *Soc de med de Par* 1921, 1921, 474

- Fatal case of postpartum eclampsia associated with accidental hemorrhage F IVENS J Obst & Gynec Brit Emp 922, xxx, 637
- Nodular erythema in the puerperium E GUINER Rev Med de la Suisse Rom 9 2, xii, 706
- Pyelitis in the puerperium A ROGERS Ohio State M J 922, xviii, 825
- A venous puerperal complication, gangrene of the leg A DE MORAES Rev de gynec Obstet 922, xvi, 475
- Postabortal hemolytic streptococemia P F WILLIAMS Am J Obst & Gynec 9 2, iv, 636 [259]
- The provocation of crises in severe puerperal infection by the intravenous injection of antistreptococcus serum KUNAU and MEYER Bull etudes Soc med d hôp de Par 922, xli, 504
- Anti streptococcal serum in puerperal infection W LUTTEN Med J Australia, 922, ii, 673
- Mastitis puerperalis E D MARTIN Surg Clin N Am 9 1, 1463

Newborn

- Cranial stress in the fetus during labor and on the effects of excessive stress on the intracranial contents E HOLLAND J Obst & Gynec Brit Emp 922, xxx, 55
- Dehydration in the newborn H BARKIN and C GOMES Am J Dis Child 922, xxiv, 497, 506
- Orifices media in the newborn MARY and CAMMEL Gynec et obst 922 vi, 33
- Fetal tetanus in child W H GREENMAN J Am M Ass 922, lxxxi, 800
- Epiphyseal slipping of the upper end of the humerus suggesting obstetrical paralysis J M JORDAN Bol y trab Soc de ciruj de Buenos Aires, 922, vi, 93
- The value of routine determination of bleeding and coagulation times upon newborn infants M WATKINS Minnesota Med 922, v, 73
- Feeding the newborn infant W N BRANLEY Therap Gaz 922, xlvii, 7

GENITO-URINARY SURGERY

Adrenal Kidney and Ureter

- The dangers of pyelography clinical and experimental investigations on their prevention LUDWIG ZIEGLER f urol Chir 92 2, 420
- The surgical diseases of the kidney in the roentgenogram E JOHNSON Ziegl f urol Chir 922, 2, 5
- The relationship of the anatomical and pyelographic findings in the surgical diseases of the kidney M GRAMMAN Ziegl f urol Chir 9 2, 545
- Experimental investigations on the deposit of fat in the kidney of the rabbit O M CHAMUS Deutsche Ziegl f urol Chir 922, xliiii, 6
- Abnormalities of the kidney and ureter case of double kidney and double ureter, with review of the literature C M HARRISON, T H BROWN, and H A DICKERSON J Urol 922, viii, 459 [266]
- Report of case of bifurcation of the renal pelvis L A WEST J Am M Ass 9 1, xxx, 95
- Pathologic complications with duplication of the renal pelvis and ureter (double kidney) W F BRASCH and A J SCHULTZ J Urol 9 2, viii, 507
- The diagnosis of horseshoe kidney F KRAFT Fortschrd Geb d Roentgenstr 9 2, xxx, 808
- Three cases of typical horseshoe kidney O MORI Ziegl f Dermatol u Urol 92 2, 50
- The nature and significance of renal stones E G CHAMBERLAIN Surg Gynec & Obst 19 2, xxv, 733 [266]
- New theories regarding the arterial supply of the kidney M SERRA Prog de la clin Madrid, 922, xxiv, 90
- The chemical aspect of intrarenal sacculi F J MEYER Ziegl f urol Chir 922, 2, 30
- Massive renal hemorrhage H ROBERTSON Ziegl f urol Chir 9 2, 233
- The treatment of renal affections by arterial waters and baths I KNOX N York M J & Med Rec 922, cxxi, 700
- The prognosis and treatment of chronic renal disease H NACLERE Brit M J 922 2, 2097
- Experimental research on pseudo-hydrophrosum G KAZEMOV Arch Ital di chir 922, vi, 355
- Hydrophrosum K FRAYE and R GLAS Ziegl f urol Chir 9 2, 275
- Remarks on hydrophrosum of the three branched renal pelvis and on the nature and form of the renal pelvis W ON GUZ Ziegl f urol Chir 922, 2, 59

- Chronic interstitial nephritis in childhood renal infarction H L WARNOCK WINTERS Edinburgh M J 9 1, xxx, 300
- The anatomy of chronic nephritis G R BROWN and G M ROTH Arch Int Med 9 2, xxx, 87
- The excretion of albumin in chronic nephritis A HAYES Presse med Par 922, xxx
- A physiological consideration of nephritis G A CLARK Pennsylvania M J 922, xxvi, 144
- Some observations on pyelitis L A MITCHELL J Oklahoma State M Ass 922, xv, 353
- The recognition of villous tumours of the renal pelvis and ureter H BRUNDT Ziegl f urol Chir 9 2, 500
- Tuberculosis of the kidney J Z MEAR J Oklahoma State M Ass 1922, xv, 345
- The urinary and renal findings in renal tuberculosis C STEINWALD Ziegl f urol Chir 922, 2, 84
- Dialysis in the treatment of tuberculous kidney C T STOLZ Med Herald, 1922, xli, 35
- A further contribution to the technique and clinical importance of nephrectomy in tuberculosis of the kidney T COHEN Ziegl f urol Chir, 922, ii, 30
- The modern diagnosis and the differential diagnosis of renal and ureteral stones W ISRAEL Ergeben d Chir Orthop 9 2, xv, 569
- Nephrectomy for renal calculi A DI BLASIO Policlin Rome, 9 3, xxx, xxx part 5
- The question of recurrent renal calculi J D BARNEY Surg Gynec & Obst 922, xxiv, 243 [261]
- Nephrolithotomy and pyelolithotomy A POUNSON Rev Assoc med argent 92 2, xxv, 571
- Obstruction of the common bile duct and uretra due to solitary cyst of the kidney O HORTER Munchen med Wchnscr 922, lxx, 279 [262]
- Congenital cystic kidney W MEYER Ann Surg 92 1, 789
- The clinical aspect of renal tumors K SCHMIDT Ziegl f urol Chir 19 2, 253
- The treatment of hypernephroma with solitary metastases F COLANINZI Ziegl f urol Chir 922, 2, 14
- Vascular complications and their control in hypernephroma E RITTS Ziegl f urol Chir 9 2, 2, 226
- A primary cancer of the right kidney with voluminous metastases in the left pleura C ROSENBERG J d urol med et chir 19 2, 255

Miscellaneous

- On some urinary methods of abuse J ROXBOROUGH
N York M J & Med Rec 922 cxv, 696
Accurate chromocytoscopy PRLIMER Zischr f urol
Chir rps 2, 245 [267]
Notes on the urea content of the cerebrospinal fluid
with special reference to the diagnosis of uremia in infant
J S AMERSON Lancet 9 2, cccii
A case of hematuria due to strongyloides intestinalis
P FORNARA Polichin Rome 923, rxx, ses part 75
Some investigations into case of parotid tumor
glands L S HALL IX and J R R IX Lancet 9 2,
cccii, 7

- Studies on glycosuria J L H 14 Act med Scand
9 lxx, 88
Urinary calculi T F LAURIE N York Stat J M
923, cxii, 549
Calculus anuria report of case D N EISENDRATH
J Am M Ass 9 lxxx, 9037
T unusual tumor functions in the upper excretory
urinary passages P JAMISON Zischr f urol Chir 9 2,
ix, 474
The relation of calcified abdominal glands to urinary
surgery J T WALSH Lancet, 9 cccc, 3 [268]
The present status of local analgesia in operations on the
urinary organs M HAPPEL Zischr f urol Chir 9
2, 3

SURGERY OF THE EYE AND EAR

Eye

- Ophthalmic progress in Egypt A F MACCALL Brit
M J 9 2, li, 59
Review of the work of the venereal disease center of the
Glasgow Fy Infirmary E J PERKINS Brit M J
9 2, li, 303
The relation of anaphylaxis to the practice of eye, ear,
nose, and throat H F MORRISON Nebraska Sta M J
9 2, 4, 6
Partial report of examination of the eyes, ears, nose, and
throat of patients in the Eastern Kentucky State Hospital
J A STICK Kentucky M J 9 2, 855
The eye and its relation to internal medicine W L
ALLEN Nebraska State M J 9 2, 424
The internal secretions in ophthalmology I Po ALL
Polish opht 9 2, 305
Auto-ophthalmoscopy S I ESTER Am J Ophth 9
973
Fest types H HARTING and H B OWEN Brit J
Ophth 9 2, 543
Investigation of the myasthenia arc in case of congenital
myasthenia H H VAI Laryngoscope 9 cxiii, 95
The cause and prevention of blindness A LA 30
Lancet 922, cccii, 59
Preliminary communication on injury cause of
diabetes insipidus with bitemporal hemianopsia C
PASCAREY Brit J Ophth 922, vi, 549 [269]
The education of partially blind children in the open
classes H W THOMSON Brit M J 9 2, 57
Conjunctival mucous cyst C J LORER A RIBON, md
A P Ch Annals Surg med 9 3 lxx 6
Conjunctival artefacts H CALDER Brit M J 9
2, 304
An X ray demonstration of the nasolacrimal passage
eye-normal and obstructed H P LLOYD and J M
CALDER J Radiol 9 2, 5 [269]
J James to the eyeball with report of few cases J R
McPHERSON Nebraska Sta M J 9 2, 434
Unusual tumor of the orbit G M F WANE Arch Ital
di chir 922, vi, 333
Newer views in the treatment of toxic optic atrophy
R GORRARD Nebraska Sta M J 9 2, 409
Ocular tuberculosis A L WINTERHEAD Brit J Ophth
9 2, 539
Tuberculosis of the eye J J SMITH Pacific Coast J
Ophth 9 2, 33
The commoner types of ocular tuberculosis W L
CARR Minnesota Med 9 2, 79
Clinical observations on the cornea R VON DRELLER
Am J Ophth 92 943

- Infection of the cornea I A M on Am J Ophth
9 97
Notes on case of cataract in child following lightning
stroke W A COHEN Indian M Gaz 9 2, 46
The diagnostic and therapeutic use of cal pavement in
myopia of the uvula tract and sympathetic ophthalmia
A C WOODS and A WARD Bull Johns Hopkins Hosp
Balt 9 2, 49 [269]
Cataract extraction with iridectomy R P RATNAKAR
Indian M Gaz 9 2, 337
Ocular cure of Chloquet with persistent hyaloid artery
H W C KLETT Am J Ophth 9 94
Extraction of the vitreous in ocular therapeutics J
BASTIEN and S Cui Prog de la clin M med,
9 2, 4
Four cases of hemorrhagic glaucoma treated with the
X ray L BRIT Actinotherap 9 2, 70
The cerebrospinal fluid in disease of the fundus W J
W LINGSTON Brit M J 9 2, 49
The relation of the optic nerve to the sphenoidal and
posterior ethmoidal sinuses G VON BRIT M J 9
2, 58
Discussion on the etiology of optic nerve atrophy C O
HAWKINS J H FRINGLE, and H M T WELSH Brit
M J 92 33
A case of ophthalmic migraine with unusual symptoms
A R MOORE Brit M J 9 2, 56
Retinitis proliferans of syphilitic and diabetic origin
A L RAJA Am J Ophth 9 916
The significance of the ocular and other changes in the
retina in arteriosclerosis and renal disease H B S
Med Press 9 2, 456
The burning of eyes cases J KINCHAM Trained Nurse
& Hosp Rev 9 lxxx 35

Ear

- Deafness from impaction S O DAVIS Ken
tuck M J 9 2, 834
The relation of the nose and throat to ear disease G
L SCHUBERT Illinois M J 9 2, 43
A lesson in the prevention of otitis media A
A ELLER Lancet 9 cccc 67
Acute otitis media in children C G BARD N brack
Sci M J 9 2, 49
Vaccinization in otorhinolaryngology J H WARD
77 Br Med J 9 3, 21, 5
Memoranda of otitis media C F YOUNG J Am M
Ass 9 lxxx, 924
Lateral mastoiditis H I Med Press 9
ccc 4

SURGERY OF THE NOSE, THROAT AND MOUTH

Nose

- Rhinoplastic N A NICOLAYEV Med rev 922, xxxix, 1
- Metal inlays and cobbler's splint dressings I F S Easick. *Marches med & clin* 1922, lxxx, 34 [271]
- Lower half headache (neuralgic) of nasal origin. G SUTHER. *J Am M Ass* 922 lxxx, 1898
- A case of chronic rhinitis treated by radium W H B AUSTIN. *Canadian M Ass J* 1922, xii, 897
- Otic pyrexia without nose throatsome E M SUTHERLAND. *Ann Otol Rhinol & Laryngol* 922, xxxi, 865
- Some physical intranasal conditions favoring involvement of the nasal accessory sinuses. M. MINTENBERG. *Ohio State M J* 922, xxi, 837-843
- The relationship between chronic suppuration, nasal sinusitis, and polypoid infestations E M STILES. *Texas Med J* 922, xix, 408
- The treatment of accessory nasal sinus disease in children H B LILLIE. *Nebraska Stat M J* 922, vii, 401
- The treatment of disease of the accessory nasal sinuses H I LILLIE. *Ohio State M J* 922, xxi, 834
- Report of case of bilateral frontal sinus exposure, subdural and supratentorial abscess, with recovery M B WALTZ. *Laryngoscope* 922, xxxii, 966 [271]
- The treatment of frontal sinus disease and complications A G LOWERY. *Nebraska State M J* 922, vii, 430
- Total blindness of both eyes in a boy 7 years of age cured by an ethmoid operation and opening of the sphenoid sinus D N HEAR. *Laryngoscope*, 922, xxxii, 874 [271]

Throat

- Observations on some throat conditions in children L BOYD. *Canadian M Ass J* 922, xii, 89
- Focal infection in the tonsils of adults suffering from subacute and chronic pyogenic disease R B FENTON. *Canadian M Ass J* 922, xii, 866
- A tonsil enucleator D J JONES. *Laryngoscope*, 922, xxxii, 990
- An articulated forceps and traction for tonsillectomy G R MARSHALL. *J Am M Ass* 922, lxxx, 996

- The safeguarding of the trachea and esophageal operation O FERRISS. *Am J M Sc* 1922, cliv, 824
- My observations after six years of constant use of the Sluder method for tonsillectomy E J BRIN. *Laryngoscope*, 922, xxxii, 901
- The palatotomy aspect of tonsillectomy under general anesthesia M C ALVARADO. *Laryngoscope*, 1922, xxxii, 929
- The clinical importance of ossification of the styloid ligament B LIVERETT. *J Am M Ass* 922, lxxx, 921 [271]
- Laryngoscopy in laryngeal tuberculosis HUGGESS. *Ztschr f Laryngol Rhinol u i. Otorinol* 1922, xi, 5
- Notes on peroral endoscopy and laryngeal surgery C JACOBSON. *Laryngoscope*, 922, xxxii, 866 [272]
- A case of foreign body (fish) in the air passages removed by laryngotracheotomy. M Po Pe. *Indian M Gaz* 922, lvi, 457

Mouth

- Some physiological aspects of oral hygiene W A JACQUETTE. *Dental Cosmos* 922 lvi, 303
- Oral diagnosis B H SMITH, J. *Dental Cosmos*, 1922, lvi, 312
- A case of oral sepsis G STEELE PIERCE. *Lancet*, 922, cccc, 383
- Two cases of buccopharyngeal prolapse A MARTIN. *Seminars med* 1922, xxxi, 971
- A case of tubercular granuloma treated with apparent success by radium G L PYRIER and G P WIDMANN. *Am J Roentgenol* 922, lx, 756 [272]
- 5th year calculus of the submandibular and sublingual glands L WATKIN. *Internat J Orthodont* 1922, vi, 800
- Tuberculosis of the salivary glands ARTHUR. *Ann. stat. clin* 922, 3, 4, 7, 8 [272]
- Mandibular osteoma, report of case and treatment LADD and GORDON. *Dental Cosmos*, 922 lvi, 307
- The value of dental examination in general medicine B S. GUNTER. *Canadian Pract*, 922, xlv, 543
- What teeth should be extracted? A D BLANCH. *J Am M Ass* 922, lxxx, 89

International Abstract of Surgery

Supplementary to
Surgery Gynecology and Obstetrics

EDITORS

FRANKLIN H. MARTIN Chicago
SIR BERKELEY MOYNIHAN K.C.M.G., C.B., Leeds
PAUL LECENE Paris

SUMNER L. KOCH, Abstract Editor

DEPARTMENT EDITORS

DEAN D. LEWIS, General Surgery	ADOLPH HARTUNG Roentgenology
CHARLES B. REED Gynecology and Obstetrics	JAMES P. FITZGERALD, Surgery of the Eye
LOUIS E. SCHMIDT Genito-Urinary Surgery	FRANK J. NOVAK, J. Surgery of the Ear
PHILIP LEWIN Orthopedic Surgery	Nose and Throat

CONTENTS

I	Authors	ii
II	Index of Abstracts of Current Literature	ii
III	Editor's Comment	x
IV	Abstracts of Current Literature	289-390
V	Bibliography of Current Literature	391-406

CONTENTS—MAY, 1923

ABSTRACTS OF CURRENT LITERATURE

GENERAL SURGERY

SURGICAL TECHNIQUE

Operative Surgery and Technique

- GRANT, A. R. No-Hand Touch Technique 289
 HOWARD, C. A. That Beneficial Cathartic After Abdominal Operations 289
 GRANT, F. R. Posterior Vaginal Drainage With Description of a New Instrument Used as Vaginal Pelvic Guide 364
 FRANK, R. T. The Treatment of Cystocele, Rectocele, and Uterine Prolapse 364
 REED, E. and ROSTTUMER, P. The Cause and Prevention of Secondary Hemorrhages After Hysterectomy 370

- LARLEY, F. H. Tuberculous Glands of the Neck and Spinal Accessory Paralysis 293
 HICKLE, A. E. The Technique of Thyrotomy 295
 JACKSON, C. Cancer of the Larynx 295
 GORDON, A. S. and CAYLOR, H. D. Histologic Study of the Effect of Ligation of the Thyroid Vessels in Esophagolalic Gaster 296
 TARRAUCHANT, Goetsch's Test and Radiotherapy in Diseases of the Thyroid 297
 WHITE, P. A. Surgery of the Thyroid Gland 297
 MARTIN, E. V. The Blood Supply of the Thyroid Gland and Its Surgical Significance 298
 SACKET, F. Tetany After Hemistruumectomy 298

Ameriobes

- CATTELL, M. Studies in Experimental Traumatic Shock. The Action of Ether on the Circulation in Traumatic Shock 289
 BARRY, J. D. and SHERBORN, W. M. A Study of Ameriobes in Prostatectomy 283

SURGERY OF THE HEAD AND NECK

Head

- D. FAHO, C. Herpetic Meningo Encephalitis in Rabbits 290
 KNOX, W. The Picture of Hypophyseal Cystitis 29
 THORNTON, J. E. Atypical Plastic Operations for Congenital Fissures of the Lip and Palate 29
 McWILLIAMS, C. A. and DUNNING, H. S. Rhinoplasty and Cheek, Chin and Lip Plastics with Tubed, Temporal Plicated Forehead Flaps 293
 T. CHAO, I. R. The Radium Treatment of Carcinoma of the Mouth 294
 SCHWARTZ, F. E. Carcinoma of the Tongue Treated by Embedding Glass Ampoules Containing Radium Emanation 294
 BLACKWELL, H. B. Some Clinical Observations on the Correction of External Deformities of the Nose by the Intranasal Route 288
 GROVE, W. E. Mischaps in the Puncture and Irrigation of the Maxillary Sinus 288
 BLACKWELL, L. S. Carcinoma of the Antrum of Highmore 289

Neck

- GROVE, O. Abscesses Descending From the Upper Air Passages 294

SURGERY OF THE CHEST

Chest Wall and Breast

- WHITMORE, W. Two Unusual Cases of Empyema 299
 HEDGECOCK, C. A. Recent Progress in the Treatment of Chronic Empyema 299
 JERSON, W. Tumors of the Breast 299
 STROUSE, L. W. Remarkable Freedom from Local Recurrence Following Chemical Removal of Advanced Cancerous Breast 300
 LEE, B. J. Results and Technique in the Treatment of Carcinoma of the Breast by Radiation 30
 KILGORE, A. R. Tumors of the Breast Arising During Pregnancy and Lactation 288

Lungs and Lungs

- LEHMAN, A. The Operation for Traumatic Hemorrhage of the Lung 30
 COOPER, E. C. The Etiology of Postoperative Pulmonary Complications 30
 HEUER, G. J. and MACGILLIVRAY, P. M. Lung Abscess 30
 LOCKWOOD, A. L. Lung Abscess 30
 MYERS, W. The Establishment of Temporary or Permanent Pulmonary Lip Fistula in the Conservative Treatment of Advanced Bronchiectatic Lung Abscess 30
 LINDSEY, W. S. The Interrelationship and End Results of Chronic Suppurative Diseases of the Lung 293
 RICHARDS, P. H. Reflections upon Nine and One Half Years' Experience with Artificial Pneumothorax 304
 D. VAN, H. M. Surgical Treatment in Cases of Pulmonary Tuberculosis 304

GREENOW, I. I. Surgery of the Pancreas. The Diagnosis and Treatment of Primary Carcinoma of the Pancreas, Particularly of the Body and Tail of the Gland 37

CARLAW, J. KITTLE, E. H. and DALZIEL, K. Discussion on the Surgical Treatment of Non-Traumatic Affections of the Spleen 338

HAGGARD, W. D. Sarcoma of the Spleen 338

Miscellaneous

BRADY, L. Mesenteric Vascular Occlusion 339

McIVER, M. A. Torsion of the Greater Omentum 339

FARHAM, J. R. A Safe Method for Drainage of Extra Abdominal Abscesses 339

SURGERY OF THE EXTREMITIES

Conditions of the Bones, Joints, Muscles, Tendons, Etc

BLOOMGOOD, J. C. The Diagnosis and Treatment of Bone Lesions. A Brief Summary of the Salient Features 330

WIELA. The Traumatic New Formation of Bone Myositis Ossificans and Periosteal Bone Cysts 33

BLOOMGOOD, J. C. Bone Cysts (Osteitis Fibrosa) Variety—Polycystic Osteitis Fibrosa 33

BLOOMGOOD, J. C. Bone Diseases—Osteoporosis or Lipomata from Fixation and Non Use 33

GLOVER, D. M. Osteomyelitis. Report of Case with Roentgenograms of Eleven Different Fractures in the Same Patient 33

DAVIS, G. G. Osteosclerosis Frigilis Generalisata Marmorata. Albert Schoenberg Disease 333

GEORGINI, R. K. A Case of Congenital Osteosclerosis 333

COLE, S. M. The Pathology of Osteitis Deformans Paget's Disease 333

WHITE, E. P. C. Osteitis Deformans in Monkey 334

FRIDBERG, A. H. Osteochondritis Deformans 334

WINSLOW, N. Suppurative Osteomyelitis Due to the Colon Bacillus 334

THOMPSON, J. E. Tumors of Bone 334

BLOOMGOOD, J. C. Bone Tumors, Metastases to the Lungs from Pure Myositis 335

II NARY, O. S. Multiple Myeloma 335

BROWN, K. P. Solitary Cyst in the Humerus 335

STEWART, M. J. A Large Myeloid Sarcoma of the Radius in Which the Tumor Is White Through out 335

JEAN, G. Brachydactylia Due to Congenital Shortening of the Metacarpals 336

II VIKHOV, M. S. Chronic Non Inflammatory Lesions of the Knee Joint 336

MARTY, W. Scalic Neuritis and Its Relation to Flat Foot 337

MORT, T. B. W. Isolated Disease of the Scaphoid 337

Fractures and Dislocations

YOUNG, A. A Five-Year Survey of the Routine Treatment of Fractures by Operative Methods 338

EDMUNDS, G. H. The Temporary Plating of Fractures of the Long Bones 338

CAMPBELL, W. C. The Treatment of Ununited Fractures 339

DORR, D. The Treatment of Ununited Fractures by Bridge Grafts 339

V. V. HOOT, W. Fracture Dislocations of the Humeral Head 34

CHRYSTAFF, M. Congenital Bilateral Forward Luxation of the Head of the Radius 34

KNAFF, H. B. Dislocation of the Semilunar Carpal Bone 34

BRADFORD, E. H. The Treatment of Congenital Dislocation of the Hip 34

CHRAUTIN, E. and HAYES, L. T. Cases of Limited Fracture of the Acetabular Rim in Luxation of the Hip 34

BRADSHAW, M. Fracture of the Femur 343

Surgery of the Bones, Joints, Muscles, Tendons, Etc

ADAMS, W. R. Bone Grafting 34

WEITMAN, A. Observations on the Correction of Deformities of Long Standing 34

McWILLIAMS, C. A. The Efficient Treatment of Acute and Chronic, Simple Traumatic Synovitis (Hemarthrosis and Hyarthrosis) by Repeated Aspirations and Immediate Active Mobilizations without Splinting 34

HOAG, C. Resection of the Distal End of the Ulna for Shortening of the Radius Following Fracture 343

LEON, A. T. Transplantation of the Tensor Fasciae Latae in Cases of Weakened Gluteus Medius 343

MERRILL, T. S. The End Result in Four Cases of Severe Destructive Injury to the Hip 344

COTTON, F. L. Knee Lesions and Operations Based on Personal Cases 344

COOK, A. G. STERN, W. G. and RYDERSON, E. W. Report of the Commission Appointed by the American Orthopedic Association for the Study of Stabilizing Operations on the Foot 346

SURGERY OF SPINAL COLUMN AND CORD

GROGGY. Lateral Subluxation of the Third Cervical Vertebra on the Fourth 347

LANGMEICKER, H. L. The Treatment of Painful Affections Involving the Cervical Vertebrae 347

V. VODUPET, E. A Case of Luxation Fracture of the Cervical Spine 348

GIBBLESTON, G. R. The Place of Operations for Spinal Fixation in the Treatment of Pott's Disease 348

CALVE, J. and GALLAND, M. Osteosynthesis in Pott's Disease 349

WHEELER, W. I. C. Operation as Part of the Conservative Treatment of Pott's Cases 349

WALLACE, J. O. Crush Fractures of the Spine 349

SURGERY OF THE NERVOUS SYSTEM

ABRAMAMEN, H. I. Injuries of the Nerves of the Arm 35

LEITCH, R. The Indications for Posterior Radicotomy Based on Twenty-Five Cases 350

OBSTETRICS

Pregnancy and Its Complications

- ROWLEY, W. N. Observations on the Blood Sugar During Pregnancy and the Puerperium 366
- WELL, W. E. and V. N. A. E. The Sugar Test in Pregnancy 366
- HINTON, W. A. The Wassermann Reaction in Pregnancy 366
- KILGORE, A. R. Tumors of the Breast Arising During Pregnancy and Lactation 368
- McNALLY, F. P. and DICOMANN, W. J. Hemorrhagic Lesions of the Placenta and Their Relation to Wirt Infarct Formation 369
- COTTE, G. The Etiology and Treatment of Tubal Pregnancy 369
- MOORE, W. B. Bacteriology of Fetal Systemic Infections Following Miscarriage or Abortion 369

Labor and Its Complications

- TELFORD, J. H. Separation of the Symphysis Pubis During Labor 370

SEIDEMANN, J. A. Double Uterus Caesarean Section for the Delivery of Pregnant Right Uterus at Term 370

GREENHILL, J. P. Once Caesarean Section, Always Caesarean Section, an U Truth 371

Newborn

- HOLLAND, E. Cranial Stresses in the Fetus During Labor and the Effects of Excessive Stresses on the Intracranial Contents 37
- McDONALD, A. L. Repeated Dystocia from Fetal Anomaly in Successive Pregnancies 37
- CROTHERS, B. Injury of the Spinal Cord in Breech Extraction as an Important Cause of Fetal Death and of Paraplegia in Childhood 37
- BACON, C. S. Some Obstetrical Problems Involved in Stillbirths and Deaths of Newborn Infants 37
- GROVES, W. R. Hemorrhage in the Newly Born 373

GENITO URINARY SURGERY

Adrenal, Kidney and Ureter

- STEVENS, W. E. Malignant Tumors of the Suprarenal Gland 374
- HARRISON, G. A. and LAWRENCE, R. D. Diabetes in the Blood and Urine as a Measure of Renal Efficiency 374
- SCOTT, M. G. The Action of Hexamethylene Tetrazine 374
- FULLERTON, A. Unilateral Diuresis 374
- LOWSKY, O. S. and MULLER, H. R. An Experimental Study of Various Chemicals Used in Pyelography 374
- QUIDRY, W. C. On the Perirenal Insufflation of Oxygen 375
- BRAAMCH, W. F. Renal Torsion 375
- MULLER, A. The Diagnosis and Surgical Treatment of Accessory Kidney 376
- STANTON, E. M. Renal Colic Associated with Urinary Conditions in Women 376
- ESCHERICH, D. N. Renal Calculi 376
- EXNER, G. The Treatment of Hydronephrosis Caused by Abnormal Renal Vessels 378
- NECKEL, F. The Clinical Picture of Chronic Infectious Diseases Involving the Renal Coverings 378
- BRUCE, H. A. Tumors of the Kidney 378
- RENN, E. and ROETTER, P. The Cause and Prevention of Secondary Hemorrhages After Nephrectomy 379
- LEIBER, The Immediate Results of Nephrectomy 379

Bladder, Urethra, and Penis

- LEONHART, C. A Case of Mixed Tumor Epithelioma of the Bladder of Probably Alantoid Origin 380
- PAKKE, W. B. Bladder Neck Obstructions Their Surgical Relief in Reference to the Young French 380
- PLIMON, L. Associated Closed Traumatic Ruptures of the Posterior Urethra and Bladder 380
- SCHILLER, H. Regeneration of Resected Urinary Bladders in Rabbits 38

Genital Organs

- SAND, K. Ligation of the Vessels (Epithymectomy) by Steinach's Method as a Means of Rejuvenation in Old Age and in Other Conditions 38
- STANLEY, L. L. An Analysis of 1,000 Testicular Substance Implantations 38
- MACKENZIE, D. W. and SIV, M. I. The Prostatic Problem 383
- BARNEY, J. D. and SHERROD, W. M. A Study of Anesthesia in Prostatectomy 383
- BEYAN, W. A. Recurrence of the Benign Prostate 383
- SCHNEI, H. R. Castration of the Male by the X-Ray 383

Miscellaneous

- N. CHOLIS, B. H. Points in the Technique of Roentgenological Examinations of the Urinary Tract 384
- ESCHERICH, D. N. Newer Aspects of Urinary Surgery 384

SURGERY OF THE EYE AND EAR

Eye

- HOOG, G. H. Pterygia of the Conjunctiva 385
 STARR, H. H. The Etiology of Sympathetic Ophthalmia 385
 KRAUSE, A. Metastatic Thyroid Tumor in the Orbit 385
 BERRY, D. Factors Influencing the Choice of Method for Cataract Extraction 386
 ELLIOT, R. H. The Mast and Halo of Glaucoma 386

Ear

- KRAMER, P. D. The Improved Artificial Drum as an Aid to Hearing: A Study of Certain Principles Involved 386
 LITTLE, H. I. A Septic Type of Temperature Not Referable to the Ear in Cases of Acute Suppurative Otitis Media 387

SURGERY OF THE NOSE THROAT AND MOUTH

Nose

- McWILLIAMS, C. A. and DE VITO, H. S. Rhinoplasty and Cheek, Chin, and Lip Plasty, rib Taped, Temporal Pedicled Forehead Flaps 393
 BLACKWELL, H. B. Some Clinical Observations on the Correction of External Deformities of the Nose by the Intranasal Route 393
 STERN, O. J. The Intranasal Injection of Uroborin in the Treatment of Hyperesthetic Rhinitis and Some of the Nasal Nevi 393
 GEORGE, W. F. Mishaps in the Fracture and Irrigation of the Maxillary Sinus 393
 BLACKWELL, K. E. Carcinoma of the Antrum of Highmore 399

Throat

- JACOBI, C. Cancer of the Larynx 395

Mouth

- THOMSON, J. E. Atypical Plastic Operations for Congenital Fissures of the Lip and Palate 399
 TUCKER, L. R. The Radium Treatment of Carcinoma of the Mouth 399
 SIMMONS, F. E. Carcinoma of the Tongue Treated by Embedding Glass Responses Containing Radium Emulsion 399
 FISHER, M. H. Some Physiological Principles in Orthodontia 399

BIBLIOGRAPHY

GENERAL SURGERY

SURGICAL TECHNIQUE

Operative Surgery and Technique	39
Anesthetic and Antiseptic Surgery	39
Anesthesia	39
Surgical Instruments and Apparatus	39

SURGERY OF THE HEAD AND NECK

Head	39
Neck	39

SURGERY OF THE CHEST

Chest Wall and Breast	393
Trachea and Lungs	393
Heart and Vascular System	393
Pharynx and Esophagus	393
Miscellaneous	393

SURGERY OF THE ABDOMEN

Abdominal Wall and Peritoneum	394
Gastro-Intestinal Tract	394
Liver Gall Bladder Pancreas and Spleen	396
Miscellaneous	396

SURGERY OF THE EXTREMITIES

Conditions of the Bones, Joints, Muscles, Tendons, Etc.	397
Fractures and Dislocations	397
Surgery of the Bones, Joints, Muscles, Tendons, Etc.	398
Orthopedics in General	398

SURGERY OF THE SPINAL COLUMN AND CORD

	398
--	-----

SURGERY OF THE NERVOUS SYSTEM

	399
--	-----

MISCELLANEOUS

Clinical Lectures—General Physiological Conditions	399
Sera, Vaccines and Ferments	399

Blood	399
Blood and Lymph Vessels	400
General Bacterial Infections	400
Surgical Diagnosis, Pathology, and Therapeutics	400
Experimental Surgery and Surgical Anatomy	400
Röntgenology and Radium Therapy	400
Hospitals Medical Education and History	401
Legal Medicine	4

GYNECOLOGY

Uterus	401
Adnexal and Per Uterine Conditions	40
External Genitalia	40
Miscellaneous	403

OBSTETRICS

Pregnancy and Its Complications	40
Labor and Its Complications	40
Puerperium and Its Complications	40
New born	40
Miscellaneous	43

GENITO-URINARY SURGERY

Adrenal, Kidney, and Ureter	403
Bladder, Urethra, and Urem	404
Genital Organs	404
Miscellaneous	404

SURGERY OF THE EYE AND EAR

Eye	405
Ear	405

SURGERY OF THE NOSE THROAT AND MOUTH

Nose	405
Throat	406
Mouth	406

EDITOR'S COMMENT

IN striving to present to the readers of the *INTERNATIONAL ABSTRACT OF SURGERY* all that is new and worth while in surgical literature, the editors are not unmindful of the fact that much that is old in surgical practice needs to be reviewed, and restated and critically analyzed. Certain writers have the happy faculty of investing old subjects with new interest, and bringing to bear on them the light of wide experience, of critical study and fresh enthusiasm.

Four subjects in widely separated fields stand out as particularly well represented in this month's contributions to the *ABSTRACT*: lung abscess, pancreatic disease, the diagnosis of bone lesions, the treatment of chronic affections of the knee joint.

THE treatment of suppurative disease of the lung is discussed in three articles, appearing originally in the *Archives of Surgery*. Heuer and MacCready (p. 302) and Lockwood (p. 30) discuss the question of lung abscess, and Lemon (p. 303) that of chronic suppurative disease of the lung. The importance of conservative measures of treatment and of extreme care in the selection of cases for operation is particularly emphasized by each writer.

A CRITICAL discussion by Jones (p. 325) of fifty-six cases of acute pancreatitis, reports by Ragby (p. 326) and Norris (p. 326) of individual cases of pancreatitis due to round worms, by Krahl (p. 326) of a case of extensive cystic degeneration, and the report by Grekow (p. 327) of three cases of carcinoma, including one successfully operated upon, the patient being still alive five years later, constitute an interesting group of contributions to the clinical study of pancreatitis. In addition, Mann and Giordano (p. 324) discuss from an experimental standpoint the question of reflex of bile as an etiological factor in the production of pancreatitis. They conclude that such a mechanism rarely produces pancreatitis.

THE diagnosis of bone lesions is a subject of vital interest to every practitioner of surgery and medicine. The importance of early diagnosis has impressed itself on every surgeon who has seen, if only once, a so-called case of simple fracture go on to malignant degeneration and, too often, to a fatal termination. Seven different abstracts on cystic and malignant disease of bone, including several on myeloma, appear in this month's issue. One by Bloodgood (p. 330) devoted entirely to the question of diagnosis, deserves especial attention.

CHRONIC, non-inflammatory lesions of the knee joint are so frequent, so completely disabling and so prone to recur that their treatment is of particular interest to every surgeon. Henderson (p. 336) and Cotton (p. 344) present an exhaustive discussion of the subject based on a wide and extensive personal experience. McWilliams (p. 343) discusses frequent aspiration of the knee joint in traumatic synovitis and Frieberg (p. 334) the less common condition of osteochondritis dissecans with production of loose joint bodies. The report of the Commission appointed by the American Orthopedic Association for the study of tabulating operations on the foot (p. 346) is of particular interest, not only because of the findings of the committee but because it represents a step forward in the standardization of surgical practice. The purpose of the American Orthopedic Association is not in any sense, we assume, an attempt to dictate surgical methods, but rather to enable the less experienced surgeon to profit by the experience of others. It is a wise man who can profit by the mistakes of others, and it is to him that this report will appeal most strongly.

A NOTE by Howard (p. 289) on the excessive use of cathartics after operation calls attention to one of many details essential to a quiet and uneventful postoperative convalescence.

INTERNATIONAL ABSTRACT OF SURGERY

MAY 1923

ABSTRACTS OF CURRENT LITERATURE GENERAL SURGERY—SURGICAL TECHNIQUE

OPERATIVE SURGERY AND TECHNIQUE

Grant, A. R. No-Bland Touch Technique. *Surg. Gynec. & Obst.* 93, xxxvi, 66

The technique described is as follows:

The instrument nurse threads the needle with sterile forceps, not touching the gut or the needle with her gloves.

The surgeon transfixes the tissue, pulls the needle through with needle holder and catches both strands of the suture near the needle with dissecting forceps in the left hand he pulls on the left end with the left-hand forceps until the right short end is only $\frac{1}{2}$ in from the point of transfixion. The long end should be proximal, and the short end distal, to the operator.

If lay the point of the needle holder across and on top of the suture just below the tips of the dissecting forceps and makes a loop around the needle holder.

If catches the short end of the suture with the needle holder, keeping its tips close to the site of the knot. While the left hand pulls the first half of the knot tight. If places the tips of the needle holder beneath the suture and makes a second loop which completes the reef or square knot.

JAMES A. H. MACGOWAN, M.D.

Howard, C. A. That Beneficial Cathartic after Abdominal Operations. *Canadian M. Ass. J.* 93, xiii, 36

In 200 cases of peritonitis treated by the author no postoperative cathartic was given. It is Howard's belief that better results are obtained by allowing the patient to remain quiet than by giving him doses of calomel a few days after operation, thereby making him restless.

The mistimed he states will resume their normal function when normal tone returns. The administration of 30 cc of saline solution daily for three days by Murphy drip is usually all that is necessary. In some cases Howard does not give a cathartic

until eight or nine days after the operation, and in others not until the patient goes home.

It has been noted that omitting is made worse by purgation. In severe cases of peritonitis cathartic is very harmful and at times exceedingly dangerous. When the abdomen is distended, purgatives are more than useless.

The author states that before he adopted his present methods his results were scarcely as good as the average, but since then they have greatly improved.

GEORGE E. BELLIS, M.D.

Cattell, M. Studies in Experimental Traumatic Shock: The Action of Ether on the Circulation in Traumatic Shock. *Arch. Surg.* 93, vi, 41.

This study was undertaken in an attempt to determine the effects of ether on the factors which influence the blood pressure, with special reference to shock or circulatory failure. The author first considered the effects of ether on the blood pressure, and then its action on the heart, the vasomotor system, and the blood vessels.

The interpretation of blood pressure changes caused by ether is extremely difficult. According to the literature on this subject ether properly administered to normal subjects causes no fall in the blood pressure and may even cause a transitory increase during the early stages of its administration. In shock, circulatory collapse frequently occurs.

Most of the author's experiments were performed on cats. In determining the effect of ether on the blood pressure of shocked animals the methods used in obtaining the records and in administering the ether were similar to those used for the normal animals. The effects on the blood pressure were strikingly different after the development of shock. In the course of work at the laboratory it was noted that higher concentrations of nitrous oxide may result in a fall in blood pressure nearly as great as that due to ether. In some of the animals it was impossible to obtain complete abolition of the eye

reflex without a fall in the pressure but this fall was at any less than that resulting from ether.

The experimental evidence regarding the effects of ether on the heart strongly favors the assumption that in the concentrations of ordinary anesthesia, ether causes a decrease in the efficiency of the heart which might account for any fall in arterial pressure occurring under ether anesthesia. With regard to the effect of ether and chloroform on the vaso-motor center, some observers report a dilatation of the blood vessels, and others a constriction.

The evidence obtained by the author supports the supposition that the drop in pressure caused in the shocked animal is due to some disturbance of the vasomotor system. The increase of the effect of ether in shock does not apply to ether injected directly into the circulation in small amounts being true only for the inhalation experiments, when general anesthesia is produced. In series of experiments on the perfusion rate of fluid through the vessels of the hind legs of the cats used by the

author during the development of shock due to muscle injury it was found that as the blood pressure fell there was gradually increasing constriction of the peripheral vessels.

The following conclusions are drawn:

1. The normal animal the inhalation of strong ether results in a sudden drop in the arterial pressure which is temporary. As the anesthesia deepens, the pressure gradually recovers until, by the time the eye reflex has disappeared, it may have returned to its original level.

2. In the shocked animal there is no recovery of the blood pressure after the primary fall, and the pressure continues to fall to zero even before the eye reflex disappears.

3. Nitrous oxide and oxygen, in the most favorable proportions, can be administered to the shocked animal without causing more than a slight drop in the blood pressure.

4. Observations on the heart volume of normal cats and on the contractions of the isolated hearts of cold blooded animals, together with deductions from blood pressure records, show that from its

very beginning, the administration of ether results in depression of the heart and decrease in its output which is sufficient to account for the fall in pressure in both the normal and the shocked animal.

5. The injection of large doses of epinephrine into anoxically shocked animals usually results in the disappearance of the anoxicosis either for a period of an hour or longer. There is reason to believe that this is due to an antagonistic action of the ether on the heart. Pituitary extract does not influence the pressure drop caused by ether in the shocked animal.

6. Determinations of leg volume with plethysmograph, perfusion rate measurements, the results obtained by the injection of ether directly into the circulation and the form of the blood pressure curves indicate that ether causes constriction of the peripheral vessels. This constriction may be due to (1) direct stimulation of the vasomotor center and (2) a reflex to the fall in pressure resulting from depression of the heart.

7. In the blood pressure curves resulting from the administration of ether to the normal animal the primary drop is due probably to an influence on the heart, and the subsequent recovery of the blood pressure to compensatory vasoconstriction.

8. In the shocked animal no evidence of vasoconstriction caused by ether is obtained, andpressor effects from asphyxia or sensory nerve stimulation became less or were entirely absent.

9. The condition of ether sensitiveness is brought about by any circumstances which tend to depress the animal's general condition such as low blood pressure, hemorrhage, severe operations, or the injection of acid into the circulation.

The cause of the greater depressing influence of ether on the blood pressure in shock appears to be disturbance of the vasomotor system. The usual compensatory constriction no longer occurs to offset the decreased output of the heart, and the pressure continues to fall. This might be due to a depression of the vasomotor center or to an already present maximum tone of the center.

GEORGE E. BAILEY, M.D.

SURGERY OF THE HEAD AND NECK

HEAD

Da Fano, C. Herpetic Meningo-Encephalitis in Rabbits. *J. Path. & Bacteriol.* 1915, xxvi, 85.

The cerebral fluid of all types of herpes, with the possible exception of herpes zoster, contains a virus which causes death when it is injected into rabbits. Regardless of the route of transmission, the disease may be carried from animal to animal. It is not yet known whether the virus is filtrable, and its cultural characteristics are still under examination.

One of the principal localizations of the disease is the central nervous system, here it causes an inflam-

matory lesion characterized by diffuse small cell infiltration, nerve cell degeneration, and proliferation of some of the fixed elements of the thalamencephalon, and pons. The disease has been termed "herpetic meningo-encephalitis."

While in lethargic encephalitis, nerve cell degeneration is rather local and the soft membranes are frequently unaltered, it is striking that the differences should be so greater between disease of the central nervous system in man and disease artificially produced in animals. The author found granular structures identical with the minute bodies found within and outside of the central nervous system in cases of lethargic encephalitis.

It is suggested that these granular structures may be the virus or particles of organic material to which the virus is attached.

LOYAL F. DAVIS, M.D.

Kaestl, W. The Picture of Hypophyseal Cachexia (Beitrag zum Bilde der hypophysären Cachexie). *Wien Arch f. intern. Med.* 1922, IV, 555.

The author reports a case of hypophyseal cachexia in a man 3 years old who died from pulmonary tuberculosis. Within a period of a year the patient failed visibly, showing loss of energy, marked emaciation, loss of hair, increasing apathy and mental clouding. Because of the pulmonary disease the diagnosis of hypophyseal cachexia was not made.

A autopsy revealed, in addition to the pulmonary tuberculosis, tuberculosis of the anterior lobe of the hypophysis (adenohypophysis). The posterior lobe was entirely normal. In the anterior lobe there were few ectodermal cells, but a considerable number of eosinophile cells.

Etiological factors of hypophyseal cachexia include puerperal sepsis, tuberculosis and syphilitic processes. Summowski believes that septic embolism of the artery supplying the anterior lobe is the cause in women with a febrile puerperium and this results in complete atrophy and fibrous transformation. Gammal and tuberculosis may also cause the disappearance of the anterior lobe (the cases of Faber and Scenger and Reye). In partial atrophy the signs of loss of the gland are absent, the condition being recognized only as a secondary finding at autopsy.

The chief symptoms of the condition are premature senility, loss of hair, a decrease in the function of the sexual glands, and psych changes. A period of life in which such changes do not usually occur.

In the treatment the etiology (syphilis) must be considered in addition the administration of fresh hypophyseal substance is indicated.

The author regards hypophyseal cachexia as disease of sexual maturity caused by the loss of function of the anterior lobe of the hypophysis which reacts upon the mature sex glands. He calls attention to the change in the fine structure of the anterior lobe during pregnancy and ascribes the very destructive effect of the septic embolism of this anterior lobe in Summowski's cases to the fact that it affected the organ in the process of involution. He calls attention to the known phenomenon of loss of hair in women few weeks after confinement which he attributes to the marked physiological activity of the hypophysis at the time of pregnancy.

ROBERTSON (2)

Thompson, J. E. Atypical Plastic Operations for Congenital Fissures of the Lip and Palate. *Surg. Cl.* 1914, 9, 387.

The author describes a series of typical plastic operations for congenital fissures of the lip and palate.

In repairing a complete fissure of the lip extending into the nostril the curvature of the deformed nostril must be restored so that it will resemble the sound

one in every detail, the lip must be made long enough, and the vermillion border must be restored.

In the first case that of a 6-year old boy there was a congenital fissure of the lip and palate in which the lip had been operated upon to see unsuccessfully with consequent complete destruction of the philtrum. On the left side the fissure of the lip was complete into the nostril the alveolar border was cleft at the fissure extended backward through the hard and soft palates. On the right side the margin of the nostril was intact, but the rest of the lip was fissured. The anterior margin of the alveolar border was grooved at the junction of the maxilla and premaxilla. The original skin (philtrum) covering the anterior surface of the premaxilla had been destroyed and replaced by a thin layer of epithelium of low vitality resting on a base of dense scar tissue. In several areas the surface was ulcerated. There were no erupted teeth in the premaxilla and the X-ray showed the presence of only two tooth germs, which doubtless represented the permanent central incisors. The temporary teeth had probably been extracted during previous operations.

On the palatal surface the union of the maxilla and premaxilla was complete. The septum was attached to the right edge of the palatal fissure. The premaxilla was separated from the front of the left maxilla by an interval of about 3 mm. The palatal plates on both sides were very precocious. The free edge of the left palatal plate was fully 3 mm higher than that on the right side which was attached to the septum. The palatal fissure was not more than 3 mm wide at its widest. The mucous membrane covering the palatal plates was entirely normal. An operation had been performed on the palate.

The following sequence of operations was decided upon: (1) repair of the palate and replacement of the premaxilla; (2) repair of the lip and nostrils.

Repair of the palate. Langenbeck side incisions were made and the palate was repaired from end to end in the usual manner without difficulty. Sixteen sutures of silk worm gut were used in both the hard and the soft palate. A wedge-shaped portion of the septum was removed and the premaxilla pushed back into place. It was not sutured to the left side of the maxilla but was held in place by strips of adhesive plaster passed over its anterior surface and fastened to the cheeks. The palate healed from end to end by first intention. Unfortunately the adhesive plaster irritated and destroyed the skin covering the premaxilla therefore it was removed in thirty hours. In consequence, the premaxilla did not stay in contact with the left maxilla, but projected forward again.

Three months later the premaxilla was again molded into place. After denudation of the opposed sides of the premaxilla and the left maxilla a silver wire suture was passed through the front of the left maxilla and around the premaxilla, and the two bones were brought into contact. After three weeks the wire was removed. Firm union resulted.

Repair of the lip The philtrum had been completely destroyed during the previous operations, and the epithelial covering of the premaxilla was of such low vitality that it was useless for any purpose. The left nostril flared wide open and the ala nasi was separated from the columella for a considerable distance. The right nostril was completed by a ring of normal tissue. Below this, the right margin of the cleft flared outward at a sharp angle. The margins of the cleft were separated from one another by a distance of 32 mm. just below the ala nasi, and by a distance of 35 mm. at the free edge of the lip. It was intended to make a transverse incision into the cheek on each side just below the nostrils and bring the two flaps toward the middle line so that when they were united by their mesial edges they would cover the premaxilla and form a new philtrum. Each of the lateral incisions was carried out and to point just below the outer angle of the orbit. A vertical cut was made upward behind each ala nasi to liberate it and allow it to be carried inward in a curve toward the posterior end of the columella to which it was subsequently attached. At the posterior end of each transverse incision a triangular area of cheek was finally excised to smooth out the fold or pucker that resulted when the flaps were put under tension and their tensor ends were united. The free inner margins of the flaps were pared exactly as is done in an ordinary harelip operation and then sutured.

The result was very satisfactory from the operative standpoint. Good firm union occurred from end to end. From a cosmetic standpoint the result was not so pleasing. The nostrils were fairly satisfactory but the lip was probably too long (deep) although it is little early to speak finally on this point. As time passes the nose will straighten itself out, the nostrils will become less prominent, and the lip will become narrower. The most serious disappointment is the mouth. The angles of the new mouth are drawn very close together and the lower lip has been thrown into an ugly prominent curve with everted mucous membrane.

The second case, that of a 5 year old girl, was case of complete unilateral congenital fissure of the lip and palate on the left side which had been operated upon several times. The lip and nostril showed serious defects. The palate had suffered severely showing complete loss of the central part of the velum on each side and irregular union of the mucoperiosteum in front.

The general contour of the lip was not displeasing. It was of the proper length (depth) but there was no notch on its free margin. The mucocutaneous line as defective, showing distinct break. The left nostril was considerably out of place. Its aperture lay on plane posterior to its fellow. The ala nasi was displaced outward and backward, and flared so as to expose on the surface a demilune of mucous membrane which, under normal circumstances, would have been lying on the floor of the nasal passage. Just below this demilune was a deep

pucker or crypt. The mushroom shaped curve of the under-surface of the nose was quite flattened on the left side.

The alveolar border showed a very narrow fissure between the left central incisor and the canine. No evidence of the left lateral incisor could be found. It may have been removed at one of the previous operations. The palate immediately behind the alveolar process was intact for a short distance. Then came an irregular fissure, 1 mm long and finally a line of union which reached to the level of the posterior margin of the hard palate. From this point the middle of the velum was missing. The lateral parts of the velum were prolonged backward, diverging widely into the palatoglossus and palatopharyngeal muscles, between which on each side lay the tonsil. The tonsils were unusually large.

The following sequence of operations as decided upon: (1) removal of the tonsils (2) plastic repair of the lip and nostril, (3) reconstruction of a new soft palate from the palatoglossus and palatopharyngeal and the pharyngeal wall (4) closure of the fissure in the hard palate.

Up to the present date the first three steps have been completed satisfactorily.

Removal of the tonsils The tonsils were dissected out May 18, 1909 with extreme care to preserve both palatal muscles intact.

Plastic reconstruction of the lip and nose This was done June 6, 1909. An incision was carried from the top of the nose backward along the under surface of the middle of the columella to its junction with the philtrum, thence outward, below and parallel to the margins of the nostril, across the scar of the repaired lip underneath the ala nasi in a curve, and finally downward in a curve until it reached the red line of the lip at a point previously fixed. The puckered scar tissue and depressions were removed. The dissection was carried between the alar cartilages until the lower edge of the cartilaginous septum was reached. The crura medialis of each cartilage

was separated thoroughly from the side of the septum behind and from its fellow cartilage in front. The alar cartilage on the affected side was now made to slide forward on its fellow carrying with it the displaced nostril. By this maneuver the margin of the incision on the affected side slipped forward on the other margin which remained fixed. The edges were then sutured in their new position. It was necessary to carry the median incision in the columella further forward over the tip of the nose in order to separate the alar cartilages far enough to let the left cartilage slide forward. This brought the scar into view. At first it was rather objectionable, but in a few weeks was scarcely noticeable.

Reconstruction of new velum from the palatoglossus and pharyngeal and the pharyngeal wall This operation was performed July 5, 1909. After the removal of the tonsils the deep surfaces of the palatoglossus and palatopharyngeal had fused together except at their extreme posterior ends. There seemed to be very little muscular tissue in them. They always

appeared to be nearer together before anesthesia than during deep narcosis. Probably the gag had something to do with this.

The palatopogonius was cut as near the tongue as possible and the incision carried upward and outward into the cheek through the mucous membrane lining the angle between the posterior ends of the maxilla and mandible. The palatopharyngeus was then cut where it fused with the pharynx and the incision carried through the pharyngeal mucous membrane as high as the eustachian tube. In this manner a somewhat curved triangular flap was thrown upward and inward. The base of the flap abutted on the posterior end of the maxillary alveolar margin and its blood supply was derived from the descending palatine artery. Short Langenbeck side incisions were then made along the inner margin of the alveolar processes on each side and the remnant of the velum palati lifted up from its bed until it was free from all tension. Finally the mesial edges of the flaps were pared and sutures were passed. Following the author's usual custom, vertical mattress stitches of silkworm-gut were made. Union by first intention followed. The reconstructed palate was firm and strong, although somewhat short and stubby.

At the time this article was written the fissure in the anterior part of the palate had not been repaired. This operation will be postponed for several months to allow the posterior part of the palate to become thoroughly vascularized.

O. M. RORTY, M.D.

McWilliams, C. A. and Dunning, H. B. Rhinoplasty and Cheek, Chin, and Lip Plastics with Tubed Temporal Pedicled Forehead Flaps. *Surg. Gynec. & Obst.* 93, xxxv.

The authors are of the opinion that transplanted cartilage usually remains permanently in position

and is seldom absorbed even though X-ray examination does not reveal its presence. For the insertion they prefer a transverse incision (Fig. 1 A) as it does not leave a noticeable scar and is not apt to become infected. This is adapted to cases in which it is not necessary to provide support for the columella.

The Indian and Italian methods have many faults. The Indian method leaves an unsightly scar in the center and most prominent part of the forehead. By the Italian method skin from the arm is transplanted with difficulty. Moreover, this skin is not the same color or texture as that of the face.

For most plastics on the cheeks, chin, and nose the temporal pedicled forehead flap, taken from behind the hair line, is the most suitable and gives the best results. The objection that the transplanted flap grows hair is not important for the hair can be permanently removed by the X-ray in short time. A flap is obtained from the side of the forehead its base containing the superficial temporal artery. The inner surface, including the pericranium, is undermined. A Thiersch graft is applied to the under side before the transplantation is done. If cartilaginous support is needed, it is procured from the costosternal junction and inserted between the skin and pericranium of the graft, the flap being then left in place two weeks before it is transplanted. The blood supply is adequate, and the flap remains soft and pliable on account of the Thiersch grafts on its under surface (Figs. 2 and 3). After three weeks the flap is freed and replaced on the forehead. The edges of the wound are freshened and sutured with interrupted sutures of silkworm gut. At the same time any remaining defect in the forehead is covered with Thiersch grafts.

In the authors' opinion the results of finger transplantation to correct nasal defects are unsatisfactory.

WILLIAM J. PROBERT, M.D.



Fig. 1

Fig. 2

Fig. 3

Fig. 1. Incision (Shrehan) used for insertion of cartilage into middle nose. 2. Infraglabellar incision preferred by the authors. 3. Under cartilage incision. 4. Skin incision for insertion of cartilage laterally. 5. Horizontal end incision, not incision of cheek because of danger of infection.

Fig. 2. Tubed pedicle forehead flap taken, when the hair line of the right temporal region and reflected into the nose.

Fig. 3. Side view of final result.

Tausig, L. R. The Radium Treatment of Carcinoma of the Mouth. *Med Clin N Am* 9 4 353

A large percentage of the cases referred for radium treatment at the present time are the hopeless ones which has been treated unsuccessfully by surgery or in which the seeking of expert advice has been deferred until the possibility of cure has passed. In spite of this the number of satisfactory results has been encouraging and soon it will be possible to recognize the class of cases for radiotherapy given alone or in combination with surgery.

The author reports three cases to illustrate the types of mouth malignancy suitable for radium treatment.

One case is that of a man 40 years of age who first noticed a ulcer on the right side of his tongue about four months prior to the initial examination. The lesion was a fissure like ulceration in a hard nodular mass extending from just in front of the anterior pillar to within about 4 cm of the tip of the tongue. The palpable induration projected well over the midline. Lacerated out by the Wertheim test. The lesion as too extensive for surgery or the actual cautery. The treatment of choice in this case was unscreened beta radium emanation.

The tubes are inserted in the malignant tissue rather than in the normal tissue surrounding the malignant area. The true reaction which consists of a burning pain in the tongue and swelling usually begins about one week later. The period of intensity of the reaction is variable. If metastatic gland develop it is advisable to remove them surgically if possible. If the condition is not operable bare the beta emanation should be inserted.

In the second case the author found a tumor on the inner surface of the left cheek of an upholstery worker about one year ago. The lesion a nodule hard, about 6 cm in diameter and about 4 cm high. The glands were not palpable. Five bare tubes, totalling 0.5 mc, were inserted into the mass. On account of the suspicious appearance of the tongue mixed treatment is given for some time under the impression that the carcinoma might be developed on the buccal mucosa. Within a month the reaction subsided and the mass had entirely receded. Two months after treatment hemorrhage occurred. Five months later an area of recurring thickening was noticed. Additional treatment of four bare tubes was then given. Five months ago a hard nodule developed at the tip of the tongue. Five bare tubes totalling 1 mc, were inserted into the mass. The tongue is still tender but there is no evidence of recurrence at the present time. The author feels that this case has responded well to radiotherapy.

The last case was a nodular, alternative hard lesion of the posterior edge of the soft palate involving the left side of the uvula. A course of tuberculin therapy given a spot of argon blood Wauermann had no effect upon the growth. Four bare

tubes were then inserted into the tumor. One month later one bare tube was inserted in the suspicious area on the left side of the uvula. Only one week has elapsed since the last treatment but the entire area feels soft. The cervical region was given a course of X-ray treatment soon after the first bare tube treatment. J. W. C. B. A. W. ELL, M.D.

Slomson, F. F. Carcinoma of the Tongue Treated by Embedding Glass Ampoules Containing Radium Emanation. *Chicago M Rec* 9 3 27 470

The embedding of glass ampoules containing radium emanation is superior to the usual methods of applying radium and better than surgery because (1) the soft beta rays are effective (2) under a visible circumference every cancer cell may be destroyed (3) the effect of the radiation is to some extent selective if the cancer cells are damaged more than the normal tissue cells (4) the effect of the radiation extends at least 1 cm beyond the site of the ampoule (5) the dosage is exact and (6) traumatism is minimal.

After local anesthesia is obtained the glass ampoules are boiled and inserted into the sharp end of a sterile needle back almost a plunger to the other end. Before the ampoule is ejected by the plunger the needle is withdrawn a few millimeters in order to prevent breaking the ampoule by forcing it against the tissue.

Usually from six to fifteen ampoules are inserted into the tumor tissue. Each contains one mc. The ampoules are placed about one apart and allowed to remain permanently or until they slough out in the course of healing.

The radioactivity of the ampoules is lost in about fourteen days. Healing occurs in from four to eight weeks and usually leaves a smooth cicatrix.

M. A. FARRAR, M.D.

NECK

Glogau, O. Abscesses Descending from the Upper Air Passage. *J. Ark M J & Med Res* 9 3 21 39

Glogau has worked out an operative procedure for abscesses descending into the deep tissues of the neck from the region of the pharynx, the tonsillar base of tongue or other nearby structures. As the course down the neck is the same, however the origin of the condition the method is applicable in every case. A skin incision is made over the anterior margin of the sternocleidomastoid muscle from the level of the posterior angle of the jaw to the jugular fossa. A blunt dissection the superficial tissues are pushed back and the anterior margins of the cervical sheath is retracted the omohyoid cut and the anterior mediastinum exposed. A tampon of gauze is inserted to press against the purulent material from entering the mediastinum. If the anterior mediastinum has already become infected it is drained. By lifting the thyroid forward the pos-

terior mediastinum and the peri-oesophageal tissues are exposed. Another tampon is inserted in this region. The abscess is located by sharp and blunt dissection begun at the upper angle of the wound and continued into the depths, and is then opened and drained.

In the after treatment the mediastinal tampons are removed about the fourth day and the drains into the abscess are removed according to the indications. A careful pharyngeal examination is great aid in the final stage of the operation.

The author reports three cases in which he used this method with complete success.

RALPH B. BETTMA, M.D.

Labey, F. H.: Tuberculous Glands of the Neck and Spinal Accessory Paralysis. *Surg. Clin. N. Am.* 9: 4, 1909.

Tuberculous infection of the cervical glands is usually located in front of or beneath the sternomastoid muscle, opposite the angle of the jaw, and is common on both sides of the neck. Palpation is important in the differentiation of simple inflammatory glands, tuberculous glands, Hodgkin disease, and malignancy. Tuberculous glands may be discrete or fused, depending upon the amount of caseation and secondary infection present. They persist for months without evidences of cutaneous inflammation. Tenderness occurs after caseation with secondary liquefaction and infection. Tuberculous may be associated with Hodgkin's disease. As a rule, fever appears only after secondary infection. The author has never observed the simultaneous occurrence of cervical, axillary and inguinal tuberculous denitis. When cutaneous sinus can be eliminated the presence of a chronic sinus suggests tuberculous.

The treatment consists in:

Removal of all possible septic foci draining into this region, such as teeth, tonsils, and adenoids. The tonsils are frequently the portal of entry of the tubercle bacilli. Septic foci saturate the glands with toxic substances which lower the resistance to infection by the tubercle bacilli.

Supervision and control of the patient's living conditions.

1. X-ray treatment of the glands before operation or after foci and abscesses have been drained.

4. Tuberculin therapy.

5. Incision and drainage of broken-down glands with secondary infection. Large incisions are not necessary.

6. Radical excision of the glands in certain extensive and persistent cases in cases of discrete and localized glands which are easily removed without extensive dissection and failed to disappear when other measures were used and in cases in which the disease continues to spread in spite of conservative treatment.

Division or injury of the spinal accessory nerve in simple incision or radical excision may cause trapezius paralysis. The author has previously re-

ported twelve such cases. In some cases the nerve was carefully preserved but persistent paralysis resulted. Spinal accessory paralysis causes lengthening and sagging of the shoulder. The scapula falls away from the midline. The upper angle of the scapula is prominent on account of its support by the rhomboid muscles and on account of the sagging of the outer angle due to the weight of the arm. The arm can be abducted slightly less than 90 degrees. In cases in which the third and fourth cervical and the spinal accessory nerves anastomose to supply the trapezius muscle the trapezius may function through the cervical plexus after injury of the spinal accessory nerve. In extensive dissections, especially about the internal jugulars, the third and fourth cervical nerves may also be injured.

WALTER C. BURKET, M.D.

Hertzler, A. E.: The Technique of Thyrotomy. *Ann. Otol. Rhinol. & Laryngol.* 9: 333, 3.

The author describes the following technique of external operation for the removal of intrinsic tumors of the larynx:

For a distance of 2½ in. with its mid point over the height of the Adams apple, the skin is infiltrated with a local anesthetic. From this line the subdermal tissues down to the surface of the cartilage are injected and the superior laryngeal nerves are blocked. The laryngeal mucosa is then anesthetized by passing the needle obliquely through the cricothyroid membrane and through the thyroid cartilage, the solution being introduced between these structures and the mucosa.

A vertical incision is made along the line of primary infiltration, and the vessels are clamped and ligated. The thyroid cartilage and the cricothyroid membrane are exposed. These structures are split exactly in the midline dividing the cartilage and the mucous membrane. The edges are retracted and the vocal cords located. After the mucosa is cut the two parts of the thyroid cartilage are carefully retracted with small retractors. The entire interior of the larynx is then exposed to view and the necessary operation is done. After the operation, the retractors are removed, the cut edges of the thyroid cartilage being allowed to resume their natural position. The fascia over the cartilage is united with interrupted catgut sutures. The skin is closed with horsehair.

ARTHUR L. SKEFFLER, M.D.

Jackson, C.: Cancer of the Larynx. *Ann. Surg.* 9: 3, 1899.

The author states that cancer rarely ever develops in previously entirely normal larynx.

For all clinical purposes the term precancerous condition may be defined as any histologically abnormal condition intervening between the normal and the cancerous.

Vocal abuse should be considered a factor in cancer of the larynx. Persistent vocal abuse is one of the most common causes of chronic laryngitis.

keratoses, papillomata, and granulomata. When perpetuated by local abuse and other causes, these conditions may favor the development of cancer.

Excision of the ventricle should be placed as the precancerous class of conditions. In one case the author was able to make a definite diagnosis of cancer on the same side as the excision ten years after the excision was first discovered.

Twelve of the author's cases of cancer of the larynx a foetic lesion preceded the cancerous lesion.

Diseased tonsils should be considered a cause of cancer of the larynx as focal infection in the tonsil may be the chief etiological factor in chronic laryngitis and chronic laryngitis may be a precancerous condition. The author is convinced that the chief factor in the etiology of laryngeal papillomata, granulomata, and hematomata is some form of irritation, including that due to trauma and chronic inflammation.

The vocal cords are the parts of the larynx subjected to the most irritation. The author has seen ten cases in which an isolated cancerous lesion developed on one cord at a point exactly opposite an isolated cancerous lesion on the other cord. During phonation, the lesions touched. In neither case was there any continuity between the lesion.

In the treatment of precancerous laryngeal conditions absolute rest of the larynx is essential. It is difficult to obtain such rest as the dusty atmosphere in most dwellings is injurious.

Laryngectomy is so mutilating that it is unwise to use it in the treatment of a chronically inflamed larynx merely suspected to be cancerous.

Keratosis and similar overgrowths of epithelium occurring in adults are to be dealt with as potentially precancerous conditions.

JAMES C. BRASWELL, M.D.

Glendon, A. S. and Gaylor H. D.: Histologic Study of the Effect of Ligation of the Thyroid Vessels in Euthyroidal Goiter. *Surg Gynec & Obst* 1935, vol. 75.

Following ligation of the thyroid arteries there is a marked drop in the basal metabolic rate in cases of hyperplastic goiter. In a series of forty-two ligations there was an average drop of from +60 per cent to +30 per cent ten days after the operation.

A histologic study of the thyroid gland was made to determine the involution changes following ligation and to correlate them with the clinical course of the case. The vessels of the glands studied had been ligated for from five to three hundred and thirty days before thyroidectomy. The portion of the gland away from the ligated pole served as control. Sections were taken from the gland near the ligated pole and compared with sections from the unligated portion. The size of the follicles, the type of epithelium lining them, and the amount of colloid present were particularly noted.

The most constant finding of the early period in the sections taken near the ligated area



Fig. Large follicles lined with cuboidal epithelium and sprout-like processes projecting into the lumen of follicles, five days after ligation.



Fig. High columnar epithelium lining the follicles of the ablated pole. Compare with Fig. 1.

tendency of the lumina of the follicles to be large and filled with colloid. The portions of the gland for the entrance of the ligated vessels were surprisingly free from these changes and apparently more active, as shown by the marked parenchymatous hypertrophy (Figs. 2 and 3).

The frequency of the involution forms is shown in the table.

Definite involution changes were found in thirty-five of fifty cases (70 per cent). No relationship between the time of ligation and the time of partial thyroidectomy was demonstrable. The clinical course of the condition was found that definite

Type of lesion	Evolution changes			
	Cases	Marked	Slight	Indefinite
U. polier	3			5
S. polier	2	14		
Trappeur		5		
Quadrupoleur				

clinical improvement and lowering of the basal metabolic rate occurred more frequently when definite involution changes were demonstrable in the ligated poles.

Tarnuțeanu's Goetach's Test and Radiotherapy in Diseases of the Thyroid (Exposé de Goetach et radiothérapie dans les affections du corps thyroïde) *J. de méd. et de chir.* 9 71 5

Although amelioration of the symptoms in exophthalmic goiter is proof of the efficacy of radiotherapy, the radiologist has no guide in regard to the time at which each treatment should be stopped. To obtain such a guide the author tried the Goetach test for hyperthyroidism, described first in 1908 via the subcutaneous injection of 5 c.c.m. of dextrose solution. The only modification made by Tarnuțeanu was the use of 1 c.c.m. of solution instead of 5 c.c.m. This test he has applied to all patients who have come to him for roentgen treatment for disease of the thyroid. Cases are classified as follows:

Cases of true exophthalmic goiter with positive Goetach test prior to treatment, which were not benefited by radiotherapy that after the treatment the Goetach test was negative or only feebly positive.

Cases in which, after improvement following radiotherapy, there was a relapse, the Goetach test again becoming positive.

3. Cases undergoing treatment by radiotherapy in which the Goetach test was negative.

4. Cases not having radiotherapy and with negative Goetach test.

From his findings in these cases the author comes to the following conclusions:

By the objective and functional disturbances which it provokes the Goetach test gives information regarding hyperfunction or dysfunction of the thyroid gland.

It allows the radiologist to make a selection of patients with diseases of the thyroid and to separate those amenable to radiotherapy from those who should be treated by other methods.

3. The Goetach test is a rational biological test which indicates to the radiologist when the treatment should be stopped.

4. After the completion of radiotherapy the test makes it possible to keep the patient under observation as it must be periodically repeated. It will reveal even the slightest tendency to relapse so that treatment may be renewed before the symptoms become fully apparent.

R. A. BARNES

Whit P. A. Surgery of the Thyroid Gland *J. Tex. State M. Soc.* 9 3 222

Surgery, X-ray and radium, in conjunction with rest and palliative medication are the only measure in goiter treatment which have survived the test of time.

Plummer divides goiters into three types: colloid, denodular, and exophthalmic goiter.

Colloid goiters require surgical treatment should not receive X-ray or radium treatment. They may be prevented by giving iodine and three-fourths of them can be reduced by the administration of iodine or thyroid products. They are symmetrically enlarged, feel soft and granular, and microscopically show dilated acini filled with colloid material and lined with flattened epithelium. The basal metabolism is normal. This type of goiter probably never occurs in persons over 35 years of age but is common during adolescence especially in girls, often appearing at or following puberty and usually disappearing before the age of 35.

The denodular goiter is a surgical condition but should not be operated upon before the patient's growth is completed because it seldom becomes toxic during adolescence; the thyroid gland is greatly needed at this period, and immature adenomata may be left to develop later. After growth is completed the adenomata may be removed, whether they are toxic or not, because of the danger that they may become toxic. They occur most commonly in middle life, but may appear during adolescence becoming prominent only when the colloid material subsides. Adenomata are irregular and nodular; their consistency depends on the degenerative process present. Those of the fibrous and calcareous types are hard, while those of the colloid, cystic and hemorrhagic types are soft. Microscopic examination shows the adenomata to be encapsulated by normal thyroid tissue. The acini of the denodular may be fetal or adult in type and may contain large quantities of colloid material. Toxic adenomata show no hypertrophy or hyperplasia of the acinar epithelium. Toxicity is due to degenerative products. The average age at which toxic symptoms appear is 43 years. At first the toxicity is mild but it gradually increases. It exerts selective action on the heart and blood vessels, causing such symptoms as an irregular pulse, attacks of tachycardia, hypertension, and later myocardial degeneration, dyspnea and edema. Tremor, moist and flushed skin, and loss of weight and strength are noted. The metabolic rate is increased, but does not reach the height of that in exophthalmic goiter. Exophthalmos is absent. There does not seem to be any rational basis for X-ray or radium treatment. After operation the metabolic rate usually becomes normal.

Exophthalmic goiter may occur at any period of life. It has been found in children under 10 years of age and in persons nearly 60 years old. The symptoms are tachycardia, flushed moist skin, tremor and loss of weight and strength, which appear early

and progress rapidly. Exophthalmos develops in the first few months in 50 per cent of the cases and during the first 5 years in 90 per cent. The pulse is rapid but regular until myocardial degeneration occurs late in the disease. There are remissions and exacerbations of the condition. The gland is symmetrically enlarged, feels quite hard and macroscopic examination shows that the actual epithelium is hypertrophied but that very little colloid is present.

The rapid, often explosive development of ophthalmic goiter carries menace to life and entails rapid degenerative changes in vital organs. The natural course of the disease and each exacerbation hastens dissolution or chronic invalidism. If there is doubt as to the patient's tolerance of thyroidectomy a preliminary superior polar ligation will give a test. If the patient cannot withstand thyroidectomy a second ligation will modify the crisis so that operation may be performed three or four months later. In thyroidectomy for exophthalmic goiter all but the posterior capsule of one lobe, the isthmus, and part of the other lobe should be removed. One sixth of a normal lobe will maintain thyroid function. Myxedema following thyroidectomy is rare condition. After surgical treatment of exophthalmic goiter including lites and severe cases, over 64 per cent of the patients are free from all evidence of hyperthyroidism, and 85 per cent are markedly improved, making approximately 80 per cent of excellent results after 21 years.

Those who use the X-ray and radium are in many cases making premature and extra agent of claim for the treatment of exophthalmic goiter but some of the work merits consideration. However it is not known that large enough number of patients will escape subsequent exacerbations and consequent visceral damage to offset the known defect in this method of treatment.

Goetach gives the X-ray place in the treatment of mild cases and in the preparation of severe cases for surgery, but warns that it may cause the loss of valuable time with great increase in the surgical risk. Jones states that the benefit of X-ray treatment should be estimated and controlled by basal metabolism tests. Holmes points out the dangers of myxedema from too long or prolonged X-ray dose.

Equally good result should be obtained by radium as with the roentgen ray.

WALTER C. B. KATZ, M.D.

Martin, C. V. The Blood Supply of the Thyroid Gland and Its Surgical Significance. *Surg. Gynec. & Obst.* 9:13, 1929. 40.

A detailed study of the blood supply of the thyroid gland as made by injecting autopsy specimens with barium carmine gelatin mixture. Injections into the superior or inferior artery on one side invariably forced the mixture out of the corresponding vessel on the same side. In number of

instances the injected material also appeared in the vessels of the opposite side.

The principal arterial trunks ramify on the surface of the gland within the true capsule and anastomose freely with one another. The superior thyroid artery is very constant in division and distribution generally dividing into three branches. The inferior thyroid artery divides into two or more branches at varying distances from the gland.

As a rule the arteries in the substance of the gland are accompanied by veins, which join at various points. These veins follow the course of the arteries closely and at different points empty into the larger veins that emerge from the interior of the gland and anastomose freely on the surface.

The individual vessels are larger in cases of colloid goiter than in cases of exophthalmic goiter. Because of the vascularity of most exophthalmic goiters this observation appears to be paradoxical, but is explained by the multiplicity of small vessels found in hyperplastic thyroids.

Hemorrhage after operation, which is now so common generally occurs from a few hours to seventy-two hours later and usually from an inferior thyroid vein or branch of the inferior thyroid artery. Hemorrhage after the third day is extremely rare and always the result of infection.

The following conclusions are drawn:

1. The thyroid has a very rich arterial and venous blood supply.

2. There is an extensive anastomosis not only between vessels of the same lobe, but also between those of opposite lobes.

3. If all four thyroid vessels are ligated, the circulation may be reestablished through extraglandular anastomoses.

4. The secretory activity of the thyroid gland is under nerve control.

5. After ligation of the superior thyroid artery a polar ligation should be made in order to cut off the veins and lymphatics and the remaining nerve filaments.

6. Hemorrhage is best controlled by interrupted mattress sutures placed through the remaining gland tissue by ligation of all bleeding points, and by the use of gauze packing in the wound if necessary.

7. Bleeding cramps can often be demonstrated by having the patient strain or cough before the wound is closed.

Back, F. Tetany After Hemistruvectomy (Tetanus nach Hemistruvectomy). *Mitt. A. B.* 9:1, 1928. 45.

A case is reported in which in 910 hemistruvectomy on the right side as done. Recently the remaining left half of the goiter is believed to have become somewhat larger. In the past few weeks the patient has frequently noticed tingling in the hands. In February 9 there was an attack of tetanic convulsions positive Chvotchik I and II.

which lasted for twenty-five minutes. On further examination the Trousseau phenomenon was strongly positive after one minute and the electrical excitability (Erb's phenomenon) was found moderately increased. CaCC occurred with a current of 5 ma AnOC with 5 ma AnCC with 5 ma and CaOC with 4 ma (ulnar nerve).

Calcium therapy as extremely effective. Hecalcin (1 and 30 per cent) was given every second day in doses of 1 ccm. The attacks ceased after the first week of treatment but occasionally there

was slight paresthesia in the hands. In the fourth week the galvanic hyperexcitability reached the following values: CaCC with 1.0 ma, AnCC with 5 ma, AnOC with 4 ma and CaOC with 6.0 ma. The Chvostek phenomenon was obtainable only during the attacks.

This case shows that the possibility of a predisposition to tetany must be taken into consideration even after an apparently successful hemistruemectomy and that attacks of tetany may occur even after a period of years. FROEMER (2)

SURGERY OF THE CHEST

CHEST WALL AND BREAST

Whittemore, W. T. Unusual Cases of Empyema. *Surg. Clin. N. Am.* 1922, 17, 995

The author presents two cases of double unilateral empyema cavities. In the first case there was an encapsulated empyema cavity in the apex, and another at the base of the right lung. Pus from one cavity contained pneumococci, while that from the other showed streptococci. In the second case the fluoroscopic examination revealed two areas of encapsulated fluid with gas above the fluid level. At operation these cavities were found to be connected by a sinus. The patient developed a staphylococcus septicaemia but recovered.

RALPH B. BRITTMAN, M.D.

Hedblom, C. A. Recent Progress in the Treatment of Chronic Empyema. *J. Tex. State M. Soc.* 9, 3, 1920

According to the author, dealing with the conditions which predispose to or maintain chronicity and the adaptation of the antiseptic solution irrigation to its treatment, constitute the essentials of real progress in the treatment of chronic empyema. The most common causes of chronicity are faulty drainage, dense adhesions due to delayed diagnosis, tuberculous infection, bronchial fistula, foreign bodies (for example lost drainage material) and certain constitutional conditions apparently associated with inability to cope with the infection. Actinomycosis, pulmonary fibrosis occurring during the collapsed state of the lung, and empyema following complete collapse are rare causes.

In some cases cure is now effected without operation, and in many with only minor operation. When radical measures are necessary preliminary complete sterilization of the field preventing post-operative infection can be accomplished by irrigation with Dakin or hypochlorite solution. For the best results, the content of free chlorine the active principle in Dakin's solution, should be between .45 and .5 per cent.

The author describes the simple technique employed at the Mayo Clinic, which usually results in reducing the empyema cavity to a capacity of 50 to 100 cc. If the residual cavity has a capac-

ity of more than 100 cc. decortication should be performed, but in cases of long standing and in those in which the cavity is shallow permitting only slight expansion of the lung, rib resection should be performed and followed by further irrigation. If the cavity has a capacity of less than 100 cc. rib resection is performed, and the parietal pleura is excised if it is very thick and rigid.

Another successful method, used by Keller consists in preliminary rib resection and irrigation of the cavity with hypochlorite solution until seven successive sterile cultures are obtained from smears from the depths of the cavity; the soft tissues then being mobilized and sutured in layers.

When large bronchial fistula is present, open drainage is usually indicated instead of the use of hypochlorite solution by the closed method. The treatment varies according to the type of case.

Jepson, W. T. Morsé of the Breast. *J. Ill. State M. Soc.* 9, 3, 1920

The United States mortality statistics for 1920 show 72,93 deaths from cancer of which 6,437 (8.8 per cent) were due to breast carcinoma. Ninety-three are due to cancer of the male breast. Of Halsted's cases operated on for breast carcinoma, eighty-nine (42.4 per cent) were cured. Walthers' statistics from the Paris hospitals give 52 per cent of cures after three years, and Le Dentu's statistics give 47.5 per cent of cures after four years. Of Halsted's 210 cases, 5.4 per cent had involvement of the axillary lymph nodes and 7.4 per cent involvement of both the axillary and cervical lymph nodes.

Women come late for treatment because of lack of familiarity with the symptoms. The senescent woman may know of tumor in her breast and suspect its character but shrink from operative interference through fear that it will be of no avail because she has known of one or more of the 50 per cent of patients not saved by the operation. Every failure to cure by operation prevents one or more from seeking timely aid. Some women are deterred from seeking operation through fear of the magnitude of the operation or misconception of the function and importance of the breasts.

In the author's opinion the senescent woman's breast should be regarded as a useless area of integument harboring all the dangers of malignancy and its removal implies no loss of function or a danger greater than that associated with the excision of similar areas of integument elsewhere. Therefore in a case of tumor of the breast removal of the breast should not be delayed until a positive diagnosis of malignancy can be made.

The classification of breast tumor is based on the histopathology and necessitates examination of the tumor itself. This classification may not be differentiated by physical and clinical record alone. However a tentative pre-operative diagnosis must be made from the physical characteristics, the clinical history and the patient's age. A rule the last many years conditions breast hypertrophy and benign tumors, such as fibroma, adenoma and fibroadenoma may be differentiated on this basis. Occasional mistakes are made. Benign growths usually appear in the precancerous age and are encapsulated, freely movable, generally painless and slow growing.

Papillary and cystic fibroadenoma or cystadenoma is more confusing because it usually develops after the menopause and malignant forms are relatively frequent. It is simple globular freely movable slow growing, and often accompanied by serous or bloody discharge from the nipple. It consists of papillary outgrowths from the wall of large duct. If the growth and discharge do not cease or the tumor does not remain freely movable it should be treated as if it were malignant. Mixed tumors occurring after the age of 40 should be regarded with suspicion. The formation of adenomatous cysts or papillomatous growths in the cystic area of scirrhosis must be considered as normal. Chronic mastitis begins a benign condition. It is not yet known whether it predisposes to cancer. Bloodgood had 6 cases of cancer in 10 cases of chronic mastitis. Speer found 5 per cent. 195 cases. Faling discovered precancerous changes in nearly 50 per cent of cases of cystic disease of the breast and Schummelbusch considered the condition only a transition stage to carcinoma.

The author states that if the growth is considered benign it may be left undisturbed or removed locally and sectioned for study. The simplest operation may be done if there is any indication of malignancy at the time of local removal or later if such evidence is found. The study of the tissue. If the growth is a borderline condition the patient may reach the benefit of the doubt the growth being treated as if it were benign. The author does not use the microscope as an aid to the time of operation.

A cancerous breast should be removed completely with the axillary lymph nodes and the pectoral muscles if they or their sheaths show indications of involvement. X-ray and radium treatment may be added. The improvement in result justifies the radical operation.

The hope of the future lies in the prevention or the early recognition of the growth. The author believes that the time may come when there will be serious consideration of the removal of all women's breasts when they harbor such dangerous elements as are harbored by the senescent breast.

WALTER C. BARKER, M.D.

Stratford, C. W. Remarkable Freedom from Local Recurrence Following Chemical Removal of an Advanced Cancerous Breast. *N. York State J. M.* 1913, 33:12, 27.

Because of the fact that skin cancers, including rodent ulcer, prickle and squamous cell epitheliomas, keratoid growths, pigmented areas, etc., which have not penetrated the deep fascia, may be removed without return, the author concludes that the development of an enlarged technique would bring larger masses under control.

Chemical removal consists in the radical and more or less rapid destruction and removal of malignant tissues by means of caustic agents, principally potassium hydroxide and zinc chloride. Care must be taken not to destroy bony structures or to penetrate the pleural cavity.

Potassium hydroxide rapidly dehydrating and desiccating destroys all tissues with which it comes in contact. In breast cases it is employed for the first stage to remove the mammary gland, terminal and axillary tissue layers rapidly and to remove the nipple structures. It is employed last to destroy axillary nodes and the lymph glands. It is applied for one hour with the patient under the influence of morphine hypodermic. Its action may be stopped almost instantly by water.

The second stage of gross removal in breast cases is accomplished with zinc chloride. Such causes gradual and painless necrosis of all tissues. The blood and lymph vessels are thrombosed. The tissues undergo discoloration, becoming pearly white and then changing into dark gray and black. The consistency of the desiccated tissues varies from that of green tanned hides to that of soft and hard sole leathers. Necrosis may extend to the depth of 1 cm after single application. The dead tissues may be pared away from day to day following reapplication of the zinc until the general level is reached. The final plaque is left to slough out, process accompanied and facilitated by an intense inflammatory reaction of the adjacent tissues. Care is taken to prevent contact of the zinc solution with the skin as this causes pain. Water is readily absorbed and the zinc off and refilled the pain. Eventually the granulated surface is covered with Thiersch skin graft to prevent contraction.

The author has treated by this method sixty-one inoperable cancers of the breast. In forty cases previously reported there was no operative death (shock or hemorrhage). The average length of life after operation as 1 and one fourth years, but patients are still alive and free from recurrence. Three of these have lived more than seven years.

after the operation and the other three, five and one half years, four years and seven months and four and one half years respectively. In 75 per cent of the cases there was no recurrence at the time of death. Internal metastases were present in all cases as evidenced by the axillary, clavicular and mediastinal lymph glands.

The author concludes that early radical removal, before the axillary glands are involved should give permanent cure, that the earlier the chemical treatment, the simpler, more expeditious, and more effective it will be and that when it is applied to advanced broken down conditions the method is superior to every other method hitherto employed as regards both palliation and freedom from recurrence.

WALTER C. STREET, M.D.

Lee, B. J. Results and Technique in the Treatment of Carcinoma of the Breast by Radiation. *Am J Roentgenol* 1923, 62.

The author has had the opportunity to observe a large number of primary operable and inoperable and recurrent carcinomata of the breast, some of which were treated by operation plus irradiation and others by irradiation alone. All of the cases have been closely followed.

The technique used in the application of both radium and the roentgen rays has been varied from time to time. The roentgen ray was used routinely for pre-operative treatment before a radical operation, one complete cycle of about four treatments being given over the entire breast and the axillary and supraclavicular regions. Following operation, after the wound had completely healed (usually in two or three weeks) two complete roentgen-ray cycles covering the entire breast and areas of lymphatic drainage were usually given. Breast carcinomata have been treated with radium by one of five methods or a combination of them, namely, pack, tray, dental mold, the insertion of bare emanation tubes and the insertion of platinum needles containing radium emanation.

With regard to the results obtained in cases of primary operable carcinomata treated by pre-operative roentgen irradiation, radical removal, and postoperative roentgen therapy as described, no definite information is given but the belief is expressed that such treatment is of value. The result obtained in primary inoperable cases appears to be prolongation of life. In recurrent inoperable carcinomata of the breast treatment by radiation offers practically the only hope of checking the disease or effecting a cure. In the treatment of these cases the roentgen ray has been employed most frequently and the radium pack or bare radium tubes have been used in well localized, sharply defined recurrent masses. In comparing a series of recurrent cases covering a period of three years with those of another New York hospital in which no radiation was used after operation or for recurrence it was found that the period of life following recurrence was three times as long when irradiation was

used as when it was not employed. Without doubt the treatment of recurrent cases by radiation gives a marked prolongation of life. The following conclusions are drawn.

All in all, the outlook in the treatment of carcinoma of the breast by radiation is most encouraging. In no case treated by surgery can the proper use of roentgen radiation be discarded. Radiation properly administered is the most effective aid in the care of carcinoma of the breast surgically treated, and in every surgical clinic pre-operative and postoperative cycles should be employed.

For primary inoperable and recurrent cases the best method at present is external radiation with the roentgen ray with fifteen-minute exposure at a 10-in. spark gap, 2-in. focal distance, 4 mm. of aluminum filtration, and 4 ma. of current followed by the implantation into the growth of bare radium tubes, complete dose being given at the first sitting.

ABRAHAM HARTMAN, M.D.

TRACHEA AND LUNGS

Lahrnbecher A. The Operation for Traumatic Hernia of the Lung (Zur Operation der traumatischen Lungenhernie). *Zentralbl f Chir* 9. xix, 1908.

In the case of a man 7 years of age who was stabbed, suture of the lung after resection of a piece of the eighth rib 5 cm. long was necessary to arrest the hemorrhage. Six months later pulmonary hernia as large as a child's head developed at this site. At operation, the lung was found adherent to the opening in the thorax but not in the hernial sac, and was easily separated.

To close the hernial ring a mattress suture was first applied at the base of the hernial sac and the latter then formed into a pad by continuous purse-string suture and fixed to the site of the future peritoneal flaps with long broad pedicles were then made from both of the adjoining ribs, reflected upward and downward, respectively, and united by sutures. A large free transplanted flap of fascia from the fascia lata was then applied over this and the muscles and skin were sutured. Primary healing of the wound followed. Three months after the operation the hernia was completely closed off and the patient was free from symptoms.

VON TAPPEINER (2)

Cutler E. C. The Etiology of Postoperative Pulmonary Complications. *Surg Clin N Am* 9: 2, 935.

Cutler discusses the various theories regarding postoperative pulmonary complications and points out that such sequelae follow operations in two anatomical fields: (1) the abdomen and (2) the mouth, face and neck. Their incidence bears no fixed relationship to the anesthetic used. In abdominal operations pulmonary complications follow the use of local anesthesia quite as frequently as they follow inhalation anesthesia. In operations

about the face and neck it would seem that there are fewer complications following the use of local anesthesia but this is due to the fact that local anesthesia is not used in infected cases. The morbidity following gas-oxygen anesthesia is fully as great as that following ether anesthesia.

Cutler believes the term "ether pneumonia" is erroneous as aspiration plays little if any part in postoperative pulmonary complication. He calls attention to the fact that such complications occur with equal frequency in rich and poor, in persons with perfect teeth, and in those with carious teeth, and are not eliminated by the expert anesthetist. He believes that the majority of postoperative pulmonary complications are due to embolism resulting from conditions for which the anesthetist cannot be held responsible.

WILLIAM F. BRACEGIRD, M.D.

Hewer, G. J. and MacCreedy, P. M. Lung Abscess. *Arch Surg* 93 1337

The authors summarize the Johns Hopkins Hospital records of lung abscess. Of sixty cases fourteen were not diagnosed during life. In forty-three cases operated upon there are thirteen deaths, an operative mortality of 30 per cent. The total mortality is 41 per cent. Two patients treated by lobectomy died. The authors state that undoubtedly the present time surgery gives good results only in cases of single well-circumscribed abscesses in which the primary condition responsible for their development has disappeared. Twenty-one such cases are treated by drainage surgical, twenty-four cases and artificial pneumothorax, in six cases. There was one death from spreading gangrene of the lung. The late result in the cases followed were very satisfactory. Long standing chronic lung abscesses with thick walls of fibrous tissue are often not cured by drainage operations.

In thirty-one cases the abscesses followed pneumonia, in sixteen they developed after an operation (four were total colectomies). In seven cases they were due to an acute abdomen, infection, and in the remaining eight they were of unknown origin.

R. C. WARR, M.D.

Lockwood, A. L. Lung Abscess. *Arch Surg* 93 1341

Contrary to the opinion of the early writers that abscess of the lung is a common sequel of lobar pneumonia, survey of the cases reported during the last century indicates that it is rare.

By lowering the resistance in the lung tissue itself lobar pneumonia, bronchopneumonia and influenza pneumonia favor the development of lung abscess following pyogenic infection.

Lung abscess occurs most often between the ages of 35 and 40 years. It is three times as common in males as in females, and occurs in one-half times as often on the right side as on the left and about twice as often in the lower lobe as in the upper. In three of every four cases it is peripheral

and involves the pleura, and in one of four there are multiple abscesses.

Numerous lung abscesses have been caused by neglect or mismanagement on the part of nose and throat surgeons, oral surgeons and dentists. Such mismanagement or neglect is manifested in the selection of the anesthetic (in not keeping the patient's head low and in not taking sufficient precaution to prevent the inhalation of foreign matter). Such sequel may be prevented by employing local anesthetic whenever possible in surgery of the mouth, nose and throat, and in teeth extraction by keeping the head low during such operations. If a general anesthetic is employed, until the patient has thoroughly awakened by taking special care to prevent the accumulation of blood and mucus in the throat and by obtaining better hypnosis in such work.

The diagnosis depends on the history, the amount and nature of the sputum, and the findings of the roentgen ray and physical examinations.

A study of the results in these cases has led the author to conclude that surgery should not be employed as soon as the diagnosis has been made unless it is definitely indicated. In many series of cases the mortality has been unnecessarily high. Lost aid of operation, thorough medical treatment (thoracic rest and drainage) should be instituted. When this fails, pneumothorax should be produced in selected cases, surgery being reserved for those which do not respond to the other methods. The exploratory needle should not be employed.

When surgery is decided on, pure ethereal and local anesthesia with gas and oxygen (if necessary) should be used, and in the majority of cases more deliberate external and logical operation should be planned than resection of the chest wall over the suppurating and cavity or blunt puncture of the lobe.

If the patient condition is such that external operation would involve too much risk, resection, blunt puncture and exploration of the abscess with the finger should be the limit of surgical interference.

The surgeon, physician, and roentgenologist should be closely associated in making the diagnosis and in the care of these cases.

R. C. WARR, M.D.

Meyer, W. The Establishment of Temporary or Permanent Pulmonary Lip Fistula in the Conservative Treatment of Advanced Bronchiectatic Lung Abscess. *J. Ark M. J. & Med. Ex.* 93 1351

In the operation described the largest cavity is opened through the chest wall and free drainage and ventilation of the cavity are established. The ventilation of the cavity in great measure stops the foul smelling sputum. The oxygen prevents the growth of the anaerobic bacteria which settle in these cavities and which may be responsible for the odor of the sputum. After operation the patient's health is greatly improved.

So far the author has not had the opportunity to close the established fistula. In 10 of his cases closure has occurred spontaneously and the condition may be regarded as completely cured. As long as the fistula remains patent the patient must observe certain precautions, one of these being to avoid bathing or submerging the fistula in water.

RAULPH B. BETTON, M.D.

Lemon, W. S. The Interrelationship and End Results of Chronic Suppurative Diseases of the Lung. *Arch Surg* 93, 1, 343.

The author classifies the end results of acute and chronic disease of the lungs as follows: (1) resolution to normal conditions, (2) fibrosis, and (3) necrosis. Empyema, bronchiectasis, and abscess constitute the suppurative type of pulmonary disease. Acute pulmonary diseases which proceed into chronic disease are classified into seven groups.

Group 1. Acute suppurative inflammations, which may be caused by irritating gases. These rapidly fuse with later groups unless death ensues.

Group 2. Acute streptococcal bronchopneumonia common during the epidemic of influenza.

Group 3. Less acute, but almost as often fatal, pseudo-lobe pneumonia, also of streptococcal or pseudo-streptococcal origin.

Group 4. Pneumonia progressing to the formation of free or interlobar encysted empyema. In this group are the greatest number of cases of long standing conditions.

Group 5. Abscesses of the unilobular or multilobular type or cleft bronchiectasis. Included in this group are abscesses of embolic origin and the aspiration type of bronchiectatic abscess.

Group 6. Residual inflammation which develops into chronic non-tuberculous infection of the lungs or into frank bronchiectasis.

Group 7. A resolving condition, gradually reverting to normal.

There are five reasons for the chronicity noted in Group 4.

The treatment of tuberculous empyema by open methods or methods designed for the treatment of non-tuberculous forms.

The fact that the sinus wall may lead from infected tissue may be thickened walls and may remain open indefinitely.

3. The presence of an infected rib at the base of the sinus and osteomyelitis.

4. Insufficient drainage.

5. Improper position of the surgical wound. As all purulent effusions tend to form adhesions and air and transudates do not pockets are formed, the pleura is thickened and the lung does not expand properly to fill the pleural space. Bronchial fistulae or multiple fistulae are obvious causes of chronicity.

Fibrosis is one of the end results of infection and may be of varying degree: (1) fibrosis of the pleura associated with fibrosis within the lung; (2) fibrosis extending from the hilum; and (3) fibrosis within the lung and proceeding throughout the interlobular

septa, or round the bronchi and vessels or in the alveolar walls. Whether it is tuberculous or non-tuberculous, fibrosis is one of the agencies which cause changes in the position of the mediastinal structures the most obvious of which are the heart and trachea.

If there is fibrosis with persistent rough bronchiectasis must also be reckoned with first because the strength giving wall of the bronchus, which often has been weakened in the original disease of the lung gives way under the added pressure due to cough, and second because in the fibrotic lung the damaged bronchus has lost its normal elastic support and dilates when the interbronchial pressure is raised (McPhedran). Thus respiration is most apt to follow when the pleura anchors the lung to the chest wall, condition present in the majority of Lemon cases of bronchiectasis. The other factor may enter into bronchiectasis viz traction on the bronchi from inspiratory movements of the thorax, and an increase of endobronchial pressure associated with effort in coughing.

Bronchiectasis following influenza does not develop for six months or a year after the acute illness.

Norris and Landis state that pulmonary fibrosis and bronchiectasis are due to the same cause. The bronchi were dilated in about 80 per cent of the cases of massive fibrosis.

Lemon emphasizes the importance of recognizing the relationship between abscess and bronchiectasis because bronchiectasis may develop during the healing of an abscess and as patients with bronchiectasis are prone to infection abscess or bronchopneumonia may develop.

Amphidosis or tuberculous meningitis must be taken into consideration in operative procedure causing collapse of the lung in cases of unilateral tuberculosis, particularly if the disease has been of long duration. Lemon reports a case to illustrate the difficulty in the diagnosis in long-standing chronic pulmonary suppuration, and the benefit which can be obtained by surgical intervention. The patient had had influenza three years previously during a time when the scarcity of physicians in his outlying country did not permit him to have careful attention. The history and examination indicated that influenza complicated by bronchopneumonia was followed by empyema. The empyema cavity had formed fistula with the bronchus, and as a result there was continuous expectoration of large amounts of purulent material. The patient was a wheel chair invalid with chest deformity and an extreme grade of arthritis and pulmonary osteoarthropathy.

This case illustrates the principle that if patients continue ill when their primary infection should be over it must be assumed that they are suffering from suppurative disease which should be attacked at once. The peculiar deformities of the extremities, arising from all degrees of simple clubbing or hypochondriac deformity of true pulmonary osteoarthropathy are one of the interesting accompaniments of suppurative disease of the lung. Abscess

of the lung resulting from pneumonia represents the patient's failure to react effectively.

A subgroup of cases of suppuration of the lung are classified as non-tuberculous infections, these have been studied recently by Cooner in the Section on Diseases of the Chest in the May Clinic. The conclusions drawn are as follows:

Non tuberculous infection of the lung is non-specific disease but deserves a name as separate disease entity.

The essential features are cough, marked chronicity, exacerbations, little or no fever and a few other constitutional symptoms, usually purulent expectoration, lack of progression, and location of the lesion almost always in the bases.

3 The principal physical sign is moist rales.

4 The diagnosis is based mainly on the chronicity of the cough, the slight effect on the general health, the location of the signs in the bases and the persistent absence of the bacilli of tuberculosis.

5 In the differential diagnosis, chronic bronchitis, tuberculosis, frank bronchiectasis, and bronchopneumonia must be considered.

6 The prognosis must be guarded in the cases of adults.

7 The treatment is mainly postural treatment.

Ringer, F. H. Reflections upon Nine and One-Half Years' Experience with Artificial Pneumothorax. *N. York M. J. & Med. Rec.* 913, civii, 14.

Artificial pneumothorax is now being used in sicker cases than formerly and in many hopeless cases it is employed as a purely palliative measure. Cases of apical involvement have a better prognosis than those in which the base of the lung is involved because in the former partial collapse is more often possible. Cases of profuse hemorrhage give at times the most brilliant results.

Atmospheric air is now used exclusively and it has become customary to refill at shorter intervals and with less massive doses. The use of high pressure to fear adhesions is dangerous.

Accidents incident to artificial pneumothorax are becoming less common. It has been definitely established that partial collapse is productive of good results. Bilateral compression is not justifiable procedure. The most frequent complication is fluid. Fluid is dangerous because it favors gradual obliteration of the pleural cavity. Fluid was encountered in about 25 per cent of the thorax cases. The appearance of activity or an increase of activity in the uncollapsed lung is not an infrequent complication. When total collapse is possible refilling should be continued for six years. Partial collapse should be continued indefinitely. When collapse has been done for hemorrhage and the uncollapsed lung is affected, collapse should be maintained only long enough to plug the bleeding point. Although good results may come from artificial pneumothorax in cases of lung abscess, surgical treatment is to be preferred.

To epitomize briefly the conclusions reached as a result of nine and one-half years' experience with artificial pneumothorax, it can be said that the method is distinctly valuable. Immediate results are often surprisingly brilliant, the percentage of really permanent arrests disappointingly small. Of eighty-five patients treated by at least partial pneumothorax only 16 per cent are well and only 3 per cent owe their recovery to the artificial pneumothorax. Thirty per cent have been benefited.

RALPH B. BETTMAN, M.D.

Davies, H. M. Surgical Treatment in Cases of Pulmonary Tuberculosis. *Brit. M. J.* 1923, 1, 123.

In cases of pulmonary tuberculosis collapse of the lung offers a chance of improvement after medical treatment has failed. When the lung is placed at rest, its resistance to tubercle bacilli is increased and secondary changes, such as bronchiectasis, which in the later stages of tuberculosis may cause the most aggravating symptoms, are sometimes prevented. Surgical collapse is usually indicated only when the lesion is unilateral, but in few instances the author produced an artificial pneumothorax in the presence of bilateral lesions, compressing first one lung, then allowing its complete re-expansion, and then compressing the other lung.

Adhesions form the chief obstacle to successful collapse by artificial pneumothorax. These are dealt with by various methods, depending on their size, position, etc. Occasionally it may be possible to stretch them adhesion by the prolonged use of high intrathoracic pressure. Occasionally also it may be possible to tear an adhesion by high pressure, but this is fraught with the danger of tearing the lung. If the adhesions are very thin and string-like and can be seen readily with the fluoroscope they may be divided under X-ray guidance by means of a tenotome stabbed through the chest wall. Jacobson's method has a limited application.

For dense adhesions holding the upper lobe, extrapleural apoplexy may be performed. Paraffin may be employed to maintain the collapse, but transplanted fat is much better.

The lung may be collapsed also by collapsing the chest wall. The author prefers rib resection with removal of practically the entire rib to rib resection in which the anterior and posterior sections of the rib are removed and the ribs are allowed to drop downward or inward.

RALPH B. BETTMAN, M.D.

Schlesinger, K. Fibrosis of the Lung Following Ligation of the Pulmonary Artery Combined with Phrenicotomy and Partial Occlusion of the Pulmonary Veins. *Arch. Surg.* 1923, 77, 124.

The author summarizes the surgical methods to present under consideration for the cure of chronic infectious disease of the lung, particularly tuberculosis. Two methods now widely used in cases of unilateral pulmonary tuberculosis are artificial pneu-

mothorax and extrapleural thoracoplasty. These methods act indirectly.

Direct influence on the physiological function of the lung is brought about by ligation of the pulmonary artery of one lung or one lobe. The bronchial arteries furnish a sufficient supply of blood. This procedure may be reinforced by paralyzing the diaphragm or cutting the intercostal nerves. The chronic stasis which results causes replacement of the lung tissue by fibrous tissue.

Phrenotomy performed at the same time as the ligation is very helpful. The paralyzed diaphragm and the movable mediastinum tend to follow the retracting lung. On the theory that tuberculous occurs less often in persons with organic heart lesions, partial occlusion of the pulmonary veins is suggested as a further aid. A third method of bringing the lung to functional rest consists in blocking the air passages by blocking the main bronchus with a piece of fascia.

R. C. WESS, M.D.

HEART AND VASCULAR SYSTEM

Roberts, J. B. The Value of Pericardiotomy in Dog, Node and Treatment. *Arch Surg* 9 2, v.

In obscure conditions the diagnosis may be established occasionally and permanent relief given with negligible risk by digital exploration of the heart sac. The earliest American operation for rupturing cardiac wound was performed by Stewart. Other investigators have drawn attention to clinical and experimental work in cardiac surgery.

The author has had considerable experience in this line of work. The case which prompted the preparation of this article was that of a boy 7½ years of age whose condition had been diagnosed as pericarditis with effusion. The lungs were negative. The heart showed an increased area of dullness, extending to the nipple line on the right side and beyond the nipple line on the left side. The heart sounds were fairly normal, but an evident to-and-fro murmur was transmitted to the left axilla. The child was admitted to the hospital in July and was under treatment until the following September. Then roentgenogram was made. It was then sent to the laboratory with clinical diagnosis of pericarditis with effusion and left pleural effusion.

His temperature record for September varied from normal to 99 degrees F. with occasional rises to about 100 degrees F. and occasional decreases to normal. The latter part of September it was decided to tap the pericardium.

Thorough examination revealed rather loud cardiac sounds with dullness in the precordial region, but the patient was not especially cyanotic, and as he lay in bed his pulse was rather strong. Another physician and the author discussed the fact that the clinical examination did not give the impression that the patient was suffering from a large pericardial effusion.

An aspirating needle was inserted between the xiphoid cartilage and the seventh rib but no fluid

was obtained. An incision was then made down through the left fifth interspace, and the pleura and pericardium were exposed. When the needle was again inserted through the exposed pericardium no fluid except blood was obtained. The pericardium was opened by a small incision and the index finger inserted into the pericardial sac. No fluid was obtained but the heart was found to be very large. Under careful treatment the patient improved. This improvement was due evidently to the change in treatment resulting from the correction of the diagnosis and perhaps to relief of pressure on the enlarged heart by the incision in the heart sac which must have enclosed the large heart tightly.

Valuable additional history was obtained after the operation. The child had been taken acutely ill in June, with high fever, general depression and malaise. He was in bed one week, but then got up and felt better. In July he had an attack of pain in the upper abdomen which was diagnosed as gastrointestinal colic. His breathing had been rapid. He had never complained of dyspnea and cardiac pain until then. His tonsils had always been enlarged. Two months after this attack he was operated on for the removal of hypertrophied tonsils and adenoids under ether anesthesia. His general health then improved markedly from week to week.

This case and other experiences in pericardial surgery have led the author to the conclusion that careful investigation by percussion, auscultation and roentgenographic study should always be made before resort is had to tapping or other surgical attack. Laboratory research has apparently proved the possibility of entering even the hollow heart and remedying defects of its valvular apparatus.

Diagnostic pericardiotomy should be done between the fourth and fifth or the fifth and sixth ribs. In the fourth space, the middle of the incision should be at point little to the right of and below the nipple close to but below the upper edge of the fifth rib. An elliptical flap with its convexity downward, should be turned so as to expose the entire width of the fourth interspace.

If the pericardium is believed to contain pus, small puncture with the veterinary hypodermic syringe may be made before the pericardium is opened. If pus is found, new incision may be made nearer the sternum or drainage may be provided in that region to save the pleural cavity from contamination.

Whenever it is necessary to expose the heart for a wound caused by foreign body, somewhat triangular osteoplastic flap should be turned up by dividing the fourth and fifth cartilages, the intercostal muscles being used as hinges, or by the trap door suggested by DeLorme.

GEORGE E. BELL, M.D.

Coffe, D. W. Resuscitation Intracardiac Injections. *Surg Gynec & Obst* 922, XXXV 77.

The author reports the cases of five patients with cessation of the heart beat who were revived by the use of intravenous or intracardiac injections. (

drenalin. Two of the five made an uneventful recovery. In all of these cases other methods of resuscitation were tried without success. The successful method consists in the injection into the heart of 1 to 1 c cm of adrenalin (1:1000) by means of a long spinal puncture needle. Heart blood must be aspirated to prove entrance into the heart cavity. Speed is important and the heart must be massaged. The same results may be obtained by intravenous injections. The procedure described is not a substitute for the usual resuscitation measures; it is indicated only after or during measures have failed.

MANCINI H. HOWARD M.D.

PHARYNX AND OESOPHAGUS

WELSH, E. Congenital Atresia of the Oesophagus, with (Oesophago-tracheal) Fistula. Report of Three Cases. *J Am M Ass* 9, 3, 1922, 16

Plum collected 36 verified cases up to 1917. Since that time fifteen cases have been reported. He states the anomaly demands attention because of its frequency.

In the cases reported since 1917 and in sixteen of the 36 cases collected by Plum, gastrostomy proved futile. Death from starvation is certain without operation, and if operation is performed death results from shock, hemorrhage, suffocation, or bronchopneumonia, the last probably due to regurgitation. Jejunostomy has been tried once without success. Richter treated two cases by gastrostomy plus closure of the lower oesophageal segment but death occurred within twenty hours.

The malformation is practically always the same. The upper end of the oesophagus is usually dilated and ends in a blind sac at about the level of the tracheal bifurcation. The lower end opens into the trachea, 1 or 2 cm. below the bifurcation. Other malformations, such as atresia ani, may be associated with this condition.

The diagnosis is made readily. The child regurgitates almost immediately after taking food. Suffocative attacks attended by choking and cyanosis follow attempts to swallow. The stomach inflates with each inspiration and the breath sounds over the abdomen are more audible than normal. The passing of a catheter into the oesophagus under the fluoroscope and oesophagoscopy make the diagnosis certain.

The author reports three cases, almost identical clinically and anatomically, in which gastrostomy was performed. Feeding through the gastrostomy opening caused choking attacks. The first child died of bronchopneumonia eleven days after the operation, the second one day after the operation, and the third, three days later. In each case the upper segment of the oesophagus ended in a blind pouch just above the tracheal bifurcation and the lower oesophageal segment opened into the trachea near the bifurcation.

WALTER C. BURKET M.D.

FLECHER, H. Surgical Treatment of the Oesophagus. *Arch Surg* 912, vi, 256

In its development the surgery of the oesophagus has passed through several distinct stages, viz: (1) the extrapleural dorsal approach with attempts to reconstruct the lumen by suture; (2) the transpleural approach under differential pressure, with attempts to restore the tube, with or without transposition of the stomach by suture or bottom of various types; (3) the transpleural removal of the whole oesophagus from an incision at the neck, the stump being placed outside, and later reconstruction of an oesophagus by plastic operation; (4) extrapleural removal of the entire oesophagus by invagination by combined method from the abdomen and the neck; (5) extrapleural removal by combined method from the abdomen or neck or from the abdomen, neck, and back, with transposition of the stomach into the posterior mediastinum.

Fletcher admits that to present the results of surgery of the oesophagus are not good, only in cases of carcinoma of the cardiac portion have patients recovered from the operation and have lived. He believes the time is not far distant, however, when conditions of the oesophagus now regarded as hopeless may be successfully attacked.

The article is an excellent summary of the development of oesophageal surgery and is supplemented by an excellent bibliography.

RALPH B. B. ITH M.D.

MISCELLANEOUS

MOORE, E. A Dermoid Cyst of the Anterior Mediastinum. (*Kyste dermoide du mediastin anterieur*). *Arch f anca-belges de chir* 9, 227, 1919

Three months after normal parturition the patient bore a case is reported complained of painful area on the anterior surface of the right chest wall just above the upper surface of the liver. The pain first occurred in attacks lasting 1 or three days but later became constant. Coughing, expectoration, and fever were not present at any time. Treatment with fracture of rib, therapeutic light and exploratory punctures caused no improvement. The thorax first saw the patient three years after the onset of the condition, when she had lost considerable weight, appeared cachectic, and complained of pain chiefly in the right anterior axillary line immediately above the upper border of the liver. Respiration was short and difficult but no time as there was no increase in temperature.

Dullness was present over the right chest wall anteriorly as high as the second rib in the mammary line, and posteriorly to the scapula. There was complete absence of tactile and vocal fremitus over this area. Exploratory punctures yielded a straw-colored fluid which on smearing was tinged reddish brown. A ray examination revealed dense shadow on the right side of the thorax as high as the second rib and extending to the left beyond the

heart shadow. In an examination with pneumoperitoneum the gas was demonstrated to pass between the upper surface of the liver and the under surface of the diaphragm. A diagnosis of tumor of the mediastinum was made.

At operation the third, fourth, fifth, and sixth ribs on the right side were excised. A large cyst containing a large amount of degenerated material and a thick brownish fluid and small secondary cysts were found. The right lung was compressed against the posterior thoracic wall. The cyst wall was dissected free from the costal and ternal pleura but when the attempt was made to dissect it from the pericardium no large vessels at the root of the lung profuse bleeding occurred. The cyst was packed tightly with gauze. After a stormy post-operative period the patient recovered. Later the right mammary gland was turned into the thorax to fill the cavity. *Low, F. D. M. D.*

Lilienthal, H. Posterior Mediastinotomy. *Arch Surg* 93 4 74

Lilienthal describes his technique for extrapleural posterior mediastinotomy and reports a case treated in this manner. The case was that of a man aged 43 years who for 12 months had suffered pain in the dorsal region accompanied by cough and expectoration. A diagnosis of tumor of the mediastinum continuous with the lung was made. The specimen removed at operation revealed interstitial inflammatory process but no evidence of neoplasm. After the operation the local symptoms improved and the wound healed in a few weeks but the patient developed a left hemiplegia and delirium and died. Autopsy was not permitted. It is probable that death was due to metastatic cerebral lesions.

The principle of the author's technique is retraction of the divided ends of the ribs at right angles to their long axis, the extent of the available space being determined only by the length of the wound. The patient lies on his right side but turned about 30 degrees to the front. The thighs are flexed, the right arm is placed slightly behind the patient, and the left arm is placed forward and upward. A pillow is used to cause slight scoliosis. The operation is performed under general or local anesthesia. The author calls attention to the value of differential pressure in case both pleural sacs are accidentally opened. A high and low procedure are described.

Low posterior mediastinotomy is performed by making an incision on the ninth rib, beginning 8 in. from the spine, extending it along the rib to the edge of the long paraxial muscles and then curving it upward parallel with the space for five interspaces. The ninth rib is resected subperiosteally beginning just a tensor of the angle and proceeding laterally as far as the wound will permit. The finger is then inserted slowly between the posterior unresected part of the rib and the pericostum and this membrane is peeled forward with the pleura until the eighth rib is reached. When the eighth rib has been

freed from the pleura it is divided and retracted and the procedure is continued upward until sufficient space has been gained. The contents of the mediastinum are thus exposed. It is sometimes difficult to recognize the esophagus but it may be rendered clearly visible by passing a bougie with a small electric lamp in its end which shines through with a bright crimson glow. In exposing the esophagus one must guard against agon shock by applying a small pledget of 5 per cent cocaine. The esophagus may be followed down to where it passes through the hiatus in the diaphragm.

The high operation is carried out in much the same manner but the seventh or the sixth ribs are those first resected, and the fifth, fourth and third ribs are divided posteriorly. The best approach is from the left side. *R. C. WEAVER, M. D.*

Archibald, E. W., LeWald, L. T., Torek, F. J. and Others. Surgery of the Mediastinum, Including the Heart and Esophagus. Abstract of Discussion. *Arch Surg* 93 59

ARCHIBALD stated that his experience with the posterior extrathoracoplastic operation in pulmonary tuberculosis numbered fifteen cases with practical cures in from 51 to 35 per cent. He reported a case of carcinoma of the esophagus just above the arch of the aorta. A gastrostomy was performed and three weeks later he operated for removal of the cancer. He went in from the right side removing the sixth and seventh ribs. The pleura was difficult to separate. The operation was performed under positive pressure. The pleura was torn in several places and repaired. The adherent tumor was excised. A mediastinitis developed and the patient died on the sixth day. Archibald regards the method used as the only rational procedure but stated that it is often much more difficult than Lilienthal led us to expect.

LEWALD mentioned three cases of what were probably dermoids of the chest. One evacuated spontaneously through the bronchi and trachea. He referred also to a case of rapidly growing lymphosarcoma of the mediastinum. He had under observation a child and a woman whose stomachs were in the thoracic cavity.

TOREK in discussing carcinoma of the esophagus, said that improvement in the results depends upon improvement in the technique and early recognition of the condition. The status of diagnosis is that of pyroclastic thirty-five years ago. The esophagoscopes should be used more frequently and the condition recognized while it is still confined to the mucous lining. When it is diagnosed early the likelihood of infection is slight. Torek has not decided whether the transpleural or the extrapleural route is to be preferred.

GRAHAM mentioned the case of a moribund man with a large mediastinal lymphosarcoma completely surrounding the trachea and heart. A emergency decompression was attempted by longitudinal splitting of the sternum. The patient died in half an

hour Graham mentioned also case of thoracic stomach in which diagnosis of empyema following pneumonia was made, thoracotomy was performed, and the stomach opened and drained. The operation left a discharging sinus through the chest wall. Graham called attention also to the method developed experimentally in his laboratory in which double cuff of fascia lata is placed about the portion of the oesophagus to be resected in carcinoma and two weeks later the oesophagus and the inner layer of fascia lata are removed, tube being left for regeneration. The procedure gave fairly good results in dogs.

SCHLAEPFER suggested that preliminary gastrostomy or jejunostomy combined with X-ray and radium treatment might be advisable before operating on carcinoma of the oesophagus.

MILLER spoke of some experimental work on dogs in which the stomach was drawn into the thorax to replace the major portion of the thoracic oesophagus. He stated that the lower portion of the oesophagus is supplied with strong layer of submucosa.

YATES reported a disaster following mediastinal decompression. He is in favor of X-ray treatment rather than decompression.

HEDGECOCK mentioned similar experience.

GREEN suggested the injection of alcohol into the pleural cavity to cause a sterile chemical inflammation and adhesion between the parietal and visceral pleura, stating that this might prevent septal pleuritis as complication of resection of the oesophagus for carcinoma.

MATAS mentioned case of mediastinal lymphosarcoma in which he made a complete longitudinal division of the sternum as a decompression. The patient died four hours later. The idea of decompression as applied to intrathoracic neoplasms has no analogy in the principle of decompression for the relief of intracranial tension. Morphine and other succedanea gave greater relief.

FISCHER stated that he believed he would continue to use the transpleural approach for oesophageal tumors.

LELIEVRAL advised against operating after radium treatment in cancer of the oesophagus on account of the dense adhesions. He stated that for correct understanding of the relative advantages of surgical procedures, one must operate on such dogs and healthy men. He reported successful mediastinal decompression in the case of patient with large retrosternal goiter. R. C. Wiers, M.D.

Pryor, J. H. Immobility of the Diaphragm, with Report of Cases of Bilateral Immobility. *N. York M. J. & Med. Rec.* 1923, CIVIL, 75.

This article is based on 45 cases in which there had been pleurisy with effusion or empyema. The interval between aspiration or evacuation and fluoroscopic examination is about a year and a half. The cases are classified as follows: (1) empyema in the child, (2) empyema in the adult, (3) pleurisy with

effusion, (4) pleurisy with effusion and clinical pulmonary pneumonia, and (5) pneumothorax and effusion.

From the complete series it is found that the diaphragm remains unimpaired in one of six cases, the same proportion has a restricted compulsory motion, and in two-thirds of the cases all motion on one side is lost.

Fixation of the diaphragm is not as common in empyema in the child as in the adult. The tendency to more rapid recovery is apparent. Immobility of the diaphragm occurs in 50 per cent of the cases. In complete evacuation, undiscovered pockets, premature closure of the opening for drainage and insufficient attention to expansion of the collapsed lung are the causes of injury to the heart and diaphragm.

In the adult, empyema is a far more serious condition. Of fifty cases observed only eight showed no immobility or injury to the diaphragm. Pericarditis, adhesions between the pericardium and pleura, and twisting of the heart are much more common than in generally behaved and explain symptoms and complaints frequently ascribed to these causes.

Purulent pericarditis also occurs but is detected only if an autopsy is performed.

Loss of function of the affected leaflet of the diaphragm is not so common in pleurisy with effusion as in empyema. In about half the cases some motion of the diaphragm remains. The observations in cases of pleurisy with effusion and pulmonary tuberculosis are very similar to those made in uncomplicated pleurisy with effusion.

In pneumothorax with effusion the ultimate results are similar to those of pleurisy with effusion. The author calls attention to the danger of crippling the diaphragm in artificial pneumothorax.

Impairment of the movement of the diaphragm may extend to the side opposite that affected by the pleurisy or empyema. There was no compensatory increase in motion of the unaffected side. Symptoms are relatively uncommon, but there may be palpitation, impairment of breathing, cyanosis and inability to work as before.

Six cases of bilateral immobility have come under observation. All were cases of chronic tuberculosis and all of the patients had had pleurisy. The principal complaint was shortness of breath. The X-ray examination showed flattening of the dome of the diaphragm, the pericardial attachment forming the apex of an inverted V. The heart shadow was long and narrow, its original shape being entirely lost. All of the patients steadily declined and died in short time. Only one lived for two years. Two of the cases of bilateral immobility are cases in which artificial pneumothorax as employed for treatment.

A syndrome noted in this condition and never observed in any other, the author calls pleurocardiac incompetency. The findings include a distinct dyspnea, a decrease in the cardiac area

faintness or absence of the apex beat, faintness of the heart sounds, very low blood pressure, anemia, gradual loss of flesh and strength, costal breathing, absence of Litten's sign, and history of pleurisy and pulmonary tuberculosis.

In such cases one should look for X-ray evidence of bilateral immobility of the diaphragm.

There is diversity of opinion as to the cause of diaphragmatic immobility. It has been ascribed to paralysis of the phrenic nerve, to the pressure of fluid in the pleural cavity to adhesions, and to inflammation of the diaphragm leading to degenerative changes and fibrotic thickening. In the author's opinion the most probable cause is morbid change in the diaphragm.

I. E. BARKOW, M.D.

Whittemore, W. Teratoma of the Right Chest Cavity: Report of a Case. *Arch Surg* 93, vi, 28.

The author reports the case of a 15-year-old underdeveloped and undernourished boy who had had symptoms of tumor in the right side of the chest and bulging of the chest wall for fifteen months.

Operation consisted of resection of the sixth rib for 18 in. section of the fifth, seventh, and eighth ribs near the vertebral column, removal of the tumor and ligation of the pedicle. The patient recovered.

The tumor was a cystic teratoma the size of large cantaloupe. It contained bony plates, epidermis, and hair.

The lung showed no tendency to expand.

R. C. WARR, M.D.

SURGERY OF THE ABDOMEN

ABDOMINAL WALL AND PERITONEUM

Ellerbrook, N. The Operative Treatment of Umbilical Hernia. (Zur operativen Behandlung des Nabelbruchs). *Deutsche med. Wochenschr.* 9, xiv, 3.

Ellerbrook reports a case of umbilical hernia the size of an apple in which he obtained successful result by circumcising the skin, opening the peritoneum, replacing the intestines, and suturing the hernial ring. If these herniae contain the liver and the entire intestine and are associated with malformation of the abdominal wall they may reach a considerable size. For such cases, Ahlfeld has recommended cleaning the hernial covering with 86 per cent alcohol, replacement of the contents, approximation of the recti muscles, the application of a tight abdominal binder to retain the intestines, and the application of alcohol compresses to prevent disintegration. Oberheimer had devised an extraperitoneal operation.

Care is necessary in ligating the umbilical cord for if a beginning hernia of this type is not recognized by the midwife the intestines will also be ligated. Such herniae of large size may cause difficulties in labor. When the hernia has ruptured and the viscera are displaced, the intestines may be mistaken for the umbilical cord. If a child is born with this condition, the operation described should be done at once after cleaning of the viscera. In one case an operation was performed successfully by Reed in spite of considerable soiling. *Vomeronix* (2).

GASTRO-INTESTINAL TRACT

Alvarez, W. C. New Light on Gastric Peristalsis. *Am. J. Roentgenol.* 92, 2, 3.

With the aid of a specially devised apparatus the author has been able to obtain electrogramms and mechanograms which have increased our knowledge of gastric peristalsis. Details of most of the experimental work have been reported elsewhere in previous articles.

Methods are now being devised for obtaining multiple and simultaneous mechanical and electrical records of the activities of the stomach and bowel.

A few electrogramms of the human stomach have been obtained. The electrograms of the digestive tract closely resemble the corresponding mechanograms.

New evidence has been obtained as to the location and behavior of the gastric pacemaker. Stomach blocks and dissociations have been observed. Cole's discovery of gastric systoles has been confirmed.

Several peculiar types of peristalsis are described, and certain contractions are shown which might be called, by analogy, pyloric extra-systoles.

Two or three different types of contraction may take place simultaneously in one segment of the stomach as in one segment of bowel.

There is close relation between the activities of the pyloric end of the stomach and those of the duodenum.

It is hoped that the new studies will eventually help the physician and the roentgenologist to recognize and interpret syndromes in the same way as the polygraph and the string galvanometer have helped the heart specialist to recognize arrhythmic fibrillation or heart block from the history or from the feel of the pulse.

ALFRED HARRIS, M.D.

Appert, F. L. The Mechanism of Hyperchlorhydria. *Med. J. Australia*, 922, 4, 35.

Hyperchlorhydria can be brought about by increased gastric secretion and by increased rapidity of evacuation, but is lowered by an increase of the normally occurring alkaline regurgitation from the duodenum and is due more to failure of the neutralization apparatus than to any other factor.

The opening and closing of the pylorus is a matter of tension on the two sides of the pylorus and some sensory mechanism in the duodenum rather than Canon's law. Rise of gastric tone is brought about by nervous factors. Hyperthyroidism and severe strain may decrease duodenal tone. Acidity of the duodenal contents may raise the tone.

Actual pancreatic disease or obstruction of the channel by which the juice normally enters the stomach may cause hyperchlorhydria.

The use of 0.4 per cent hydrochloric acid for testing pancreatic juice is under investigation.

The fractional test meal facilitates the study of obscure dyspepsias. (CARL F. JAMES, M.D.)

Radwin, H. F. The Distribution of Acid Cells Along the Dorsal Curvature of the Stomach and the Possible Relation to the Occurrence of Gastric Ulcer. *Surg. Gynec. & Obst.* 1933 57: 187.

The average distribution of the acid cells along the lesser curvature is 63 per cent of the distance from the cardiac orifice. They are found in great numbers in the fundus and are numerous toward the cardiopyloric juncture. Beyond the cardiopyloric juncture they are widely scattered. Along the greater curvature they are found to total 55 per cent of the distance from the cardiac orifice being numerous in the fundus and crossing the cardiopyloric juncture. Along the greater curvature acid cells extend 76.4 per cent of the distance from the cardiac orifice and along the dorsal curvature they extend 80.54 per cent of the distance. Here also they are located chiefly in the fundus and do not extend beyond the cardiopyloric juncture.

The thickness of the mucosa in the various portions of the stomach varies greatly in different stomachs.

In conclusion the author states that although there may be some relation between the occurrence of ulcers in the different regions of the stomach and the distribution of the acid cells the latter is too slight to be decisive. (J. A. H. MALCOLM, M.D.)

Seiditz, H. The Pathological Relationship between Ulcerative Processes in the Stomach and Duodenum and Epigastric Hernia (Zur der pathologischen Beziehungen zwischen den ulcerösen Prozessen am Maga und Duodenum und der epigastrischen Hernie). *Arch. f. H. Chir.* 1933 57: 351.

The relationship between hernia of the lesser omentum of the stomach has been recognized for a long time. In epigastric hernia therefore an exploratory laparotomy is indicated.

The author has systematically searched for gastric disorder in every case of epigastric hernia seen during the past 5 years. In 51 per cent of the cases of ulcer in such operation as done coexistent epigastric hernia was found. On the other hand 52.3 per cent of epigastric hernia were associated with ulcerous processes in the stomach or duodenum. Males are affected more frequently than females.

Only a small percentage of the patients had no previous gastric symptoms. A number complained only of pain in the stomach and ere some are of the presence of hernia. In persons who had no previous symptoms the stomach and duodenum

were found intact at a exploratory laparotomy. Cases with pronounced gastric symptoms but in which the exploratory laparotomy revealed nothing but the hernia were especially interesting.

Laparotomy laparotomy is unnecessary when the ulcer may be definitely excluded by ordinary diagnostic measures. General complaint regarding nervousness, a feeling of pressure, and pain in the abdomen only under certain conditions are often fact in the history lead to false diagnosis. On the other hand the presence of gastric or duodenal ulcer cannot be excluded on the basis of relatively slight symptoms. As a rule moderate acidity alone is found on chemical examination of the gastric contents. Hyperacidity is found more often than acidity. In the cases of hyperacidity the presence of a ulcer appeared probable even from the history but on the whole the acidity test could not be relied upon.

Röntgenography was used routinely in all preoperative findings etc. except in 10 cases. However an ulcer was not recognized being based only on exploratory laparotomy. When the epigastric hernia was not located the liver of the stomach or duodenum striking increase in the tonicity of the stomach noted in a large number of cases and signs of atony were rare. The signs of increased tonicity were reflected unfolding of the stomach on filling a dome like tense gastric bubble, bloating of the mass in the stomach and elevation of the greater curvature. There is undoubtedly a pathologic relationship between increased tonicity and epigastric hernia. Very often peristalsis is markedly increased, probably reflex. The period of propulsion is then shortened and on further examination the emptying is found delayed. The repeated observation of gastric condition and the other symptoms point to a spastic nervous due to the epigastric hernia.

The conclusion is drawn that the methods of examination fail in the obscure and doubtful cases. Exploratory laparotomy being necessary for the diagnosis. It seems very probable that there is a genetic relationship between the ulcerative processes in the stomach and duodenum and epigastric hernia. It must be assumed that spastic conditions are produced in the gastric wall, and these as suggested by Bergmann cause ulcer formation reflex through the stimulation exerted by the hernial content. It is very difficult to prove that the epigastric hernia is present before the first epigastric symptom. The reflex does not necessarily originate in an adherent tip of peritoneum, as true peritoneal hernia are rare. Tension on the peritoneal ring due to increased intra-abdominal pressure may be sufficient. The relationship between epigastric hernia and the excitatory neurotic syndrome noted in 50 per cent of the cases cannot be merely coincidental.

The author has previously described 17 similar phenomena in the stomach and duodenum occurring in gall stone colic. (SEITZ, HART, A.)

Brasch W. Pylorectomy for High Ulcer of the Lesser Curvature (Pylorektomie bei hochliegenden Ulcus der kleinen Kurvature) *Wristchowsky* *Dtsch* 9 1, m, 243

In the case of an ulcer lying high in the stomach transverse resection, although it has its disadvantages, is considered the operation of choice. The mortality following it is greater than that of flowing gastro-enterostomy. It is sometimes apt to cause an hour glass stomach, recurrence cannot be absolutely prevented, and finally it is a severe operation which cannot be considered in every case. As pylorospasm is a constant complication of high ulcer and as this prevents its healing, the author performed a pylorotomy in case of this type in which resection could not be carried out on account of the patient's condition. This was a case of callous ulcer of the lesser curvature at the junction of the cardiac and middle thirds. Upon examination one and a half mo. after operation, the patient was free from symptoms.

Whether pylorotomy can be performed in all such cases is for the future to demonstrate, but the operation has many advantages over gastro-enterostomy and resection in that many of the well recognized complications which may follow gastro-enterostomy are absent, it is a relatively simple procedure, and the resulting condition permits the stomach to empty itself readily. *Von Hoser (Z)*

Roepke, W. How Should an Ulcer of the Stomach and Duodenum Which Has Perforated into the Abdominal Cavity Be Operated on and Treated? (Wie soll das frei in die Bauchhöhle durchgebrochene Geschwür des Magens und Zwölffingerdarms operiert und behandelt werden?) *Deutsche med. Wochenschr.* 1904, 29, 899

The author reports his experiences in nineteen cases of ulcer of the stomach and duodenum which perforated into the abdominal cavity.

It is now generally recognized that the treatment of such cases is surgical. The fact that in certain cases the liver or the omentum will restrict the accumulation of gastric contents in the upper abdominal space and thus prevent diffuse peritonitis for some time or permanently cannot be used as an argument against operative treatment.

The operation should be undertaken as soon as possible. As a rule it will bring relief as suppurative peritonitis generally does not develop until after twenty-four hours.

In the thirteen cases in which operation was done within the first forty-eight hours there were no deaths, while in the six cases in which it was performed after forty-eight hours the mortality was 50 per cent. Complications, such as pelvic and subphrenic suppurations appear within eight hours of the operation in 10 per cent of the cases, within forty-eight hours in 37.5 per cent and after forty-eight hours in 66.6 per cent.

Roepke opens the abdomen by median incision above the umbilicus. This should be made no longer

than absolutely necessary as every additional enlargement means greater cooling of the peritoneum and increases the danger of visceral prolapse which may require forceful reposition and lowers the resistance of the peritoneum.

In regard to the treatment of the perforated ulcer itself Roepke declares himself a decided opponent of any procedure including resection of the diseased portion of the stomach. As a rule, he merely sutures over the perforation. He warns against excising the callous parts of the border to obtain normal movable gastric wall for the suture because this procedure may cause a large defect the closure of which prolongs the operation. To reinforce the suture or the approximated wound edges, tip of the omentum or the hepatic ligament or a free transplants may be sutured to it. Ulcers treated in this manner tend to heal quickly especially when gastro-enterostomy is done in addition. A strip of gauze gives sufficient drainage of wound secretions.

The infected abdominal cavity should be treated by the simplest and most rapid procedure possible. Roepke does not approve of irrigation, preferring mere sponging out of the foreign material. The peritoneum will take care of the inaccessible portions, either resorbing or encapsulating them. The mortality in cases treated by irrigation (83 reported in the literature) was 30.8 per cent while in Roepke's cases it was 5.7 per cent.

Gastro-enterostomy is performed in the presence of stenosis or when its development is feared as for instance when the site of the ulcer is near or at the pylorus or in the duodenum where constriction may be caused by healing as well as the use of suture. The gastro-enterostomy relieves the site of operation in every case particularly when only simple suture has been applied. Furthermore, it is the best method to insure healing of ulcers and allows the patient to take sufficient nourishment very early.

Roepke performs postero-gastro-enterostomy in all cases in which the operation is done within forty-eight hours and which appear suitable in later cases he applies it only when distal stenosis is present or threatening. He does not use it when suppurative peritonitis is present.

Posterior gastro-enterostomy was done in thirteen of the nineteen cases reported. The one death occurred in a case in which cleansing of the gastro-intestinal tract was done only after an interval of seventy-two hours and there was severe stenosis. Of the six patients not treated by gastro-enterostomy two died after an interval of ninety-five and ninety-six hours respectively.

Subsequent examinations showed that eleven of the patients treated by gastro-enterostomy were entirely free from symptoms, whereas of the six not so treated, one required a second operation for ulcer. The after treatment should consist of rest, dietetic treatment and the application of heat to the abdomen to obtain abdominal hyperemia and promote intestinal peristalsis. *Dox (Z)*

Schmidt, E. R. Forty Four Cases of Simple Perforation of Gastric and Duodenal Ulcers with Single Method of Surgical Treatment. *Acta Chirurg. Scand.* 1922, 1 314

The author states that the average mortality of simple perforating ulcers of the stomach and duodenum is between 1 and 40 per cent. He reports forty four cases operated upon during the years 1903-1921 by seven different surgeons using the same method. In no case was operation refused on account of the patient's poor general condition. The lesion develops most frequently between the twenty-first and fortieth years of age. In the author's series there were 1 patients under 2 years and fourteen over 40 years. Thirty-two of the patients were males. One duodenal ulcer was found in a female patient and nine occurred in male patients. Five of the forty four patients gave no ulcer history. The remainder had had ulcer symptoms for periods ranging from a few weeks to over twenty three years.

The mortality was 3.33 per cent in the cases operated upon twelve hours or less after perforation, and 37 per cent in those operated upon between twelve and thirty hours after perforation. While the time elapsing between the perforation and operation is very important with regard to the prognosis, the location of the ulcer and the patient's condition are also of great significance. The mortality increases directly with the distance of the perforation from the pylorus. If the ulcer is so situated that localization may occur the prognosis is better. Ulcers of long duration are more favorable for localizing because of neighboring adhesions. If the perforation occurs when the stomach is empty localization is more apt to occur than if the stomach were full.

There were no deaths in the ten cases of duodenal perforation. The perforation was closed by extending the ulcer and then suturing. When excision was impossible the ulcer was infolded. A gastrostomy was then performed and the abdomen irrigated with normal saline solution at 40 degrees C. A drain was used in only five of the cases. When the patient was returned to his bed he was given proctoclysis, hypodermatoclysis, and sufficient morphine to relieve pain. As soon as he regained consciousness he was allowed to lie vichy after vichy and milk. The amount of food taken by mouth and the amount that ran out of the gastrostomy tube were recorded. A few days after the operation the gastrostomy tube was closed. If there was no nausea or vomiting by the end of a week, the tube was removed. An ulcer diet was given for some time after the operation. The average length of time the patients remained in the hospital was 33.30 days.

Of the forty-four patients operated upon, eleven died. The ulcer was excised in thirty-nine cases and sutured in four. In one, a Willet's fistula was made. A Mikulicz plastic was performed in one case, and gastrogastrostomy for hour glass constriction of the stomach in one. In later study of these cases it was found that eleven of the twenty

four patients had had no further symptoms, three had mild symptoms, six had a recurrence and had undergone medical treatment, 10 had had recurrence necessitating operation, and two are dead.

The author draws the following conclusions:

Perforation may occur at any age, but occurs early occurs more often during the ulcer-bearing period.

The mortality depends for the most part on three factors: the time elapsing between the perforation and operation, the severity of the peritonitis, and the patient's general condition at the time of perforation. The mortality rates of the different series of cases reported will vary as these factors vary in the cases comprising the series.

3. Gastro-enterostomy is a superfluous procedure in the treatment of perforated ulcer. By employing gastrostomy instead the mortality rate can be reduced from 10 to 5 per cent.

4. The gastrostomy opening serves as a safety valve. Nourishment can be given through it even before the patient awakens from the anæsthesia. All the postoperative discomfort of eructation, belching, nausea and vomiting is eliminated. If lavage is necessary it is a simple procedure and not disagreeable to the patient.

5. Primary suture of the abdomen after thorough irrigation with normal salt solution at 40 degrees C. favors a smooth postoperative recovery.

6. Of twenty-two patients re-examined, only two have required a second operation for recurrence of the ulcer.

7. When they leave the hospital, patients should be impressed with the fact that an ulcer diet is very essential for continued freedom from recurrence of ulcer and that it is highly desirable for them to remain under medical control for some time.

8. No cases of cancer of the stomach developed in the series of cases reviewed.

9. A high median incision has proved most satisfactory.

Excision of the ulcer removes pathologic tissue, allows approximation of the edges so that there is no protruding ulcerated surface on the inside, reduces the tension of the sutures, affords better hold for the sutures and leaves less scar tissue after healing.

Persons with ulcer should be warned of the possibility of recurrence of the ulcer and perforation. J. A. H. MACCOW, M.D.

Cotter, E. C. and Smith, J. A. Lymphoblastoma of the Stomach; Report of Two Cases. *Surg. Clin. N. Am.* 1922, 2, 2, 25.

The authors prefer the term lymphoblastoma of the stomach to lymphosarcoma and assert that the indiscriminate use of the term sarcoma has been the cause of much confusion. The disease is relatively rare. At the May Clinic there are 14 cases during the period from 1913 to 1920. A proportion of one lymphoblastoma to sixty-eight gastric carcinomata. The lymphatic type is the

most common form of gastric sarcoma. Of Hagard's seventy-six cases of gastric sarcoma, thirty represented a tumor of lymph-cell origin. Six of the twelve cases at the Mayo Clinic were operable; two of the patients died from sepsis following operation, one died four months later with general recurrence, and two showed metastases five to seven months after the operation. Seven of the twelve cases were diagnosed before operation as carcinoma, one as ulcer, one as an abdominal tumor, probably inflammatory, one as gastric lesion, probably malignant, one as pyloric stenosis, and one as tumor in the upper abdomen, probably of the pancreas.

The differential diagnosis from cancer is practically impossible. The signs, symptoms, and gastric analysis are nearly the same. Hemorrhage and anemia are not so common as in cancer because the mucosa membrane more frequently remains intact. The tumor tends to project into the lumen without ulceration and its consequent X-ray filling defect. The history is shorter and the course more rapid than in cancer.

The authors report two cases of lymphoblastoma diagnosed as cancer.

CASE 1: The patient was a man 50 years of age, who, seven months previous to admission to the hospital, experienced a progressive loss of appetite until, during the last two months, almost no nourishment had been taken. Nausea and a slight cramp-like epigastric pain followed the ingestion of food and changing of the position in bed at night. The pain did not radiate. The patient became restless and lost sleep. His weight dropped from 35 to 20 lbs.

The patient was a poorly nourished man with carious teeth, pyrexia, and foul breath. The abdomen was soft and symmetrical. A firm, slightly tender mass the size of an orange, which seemed to move with respiration, could be felt high in the left epigastrium. The hemoglobin was 75 per cent. There was absence of free hydrochloric acid, and the total gastric acidity was low. X-ray examination revealed a filling defect high up on the lesser curvature in the cardiac region of the stomach, which appeared displaced forward and to the left. The fixation and irregularity of the stomach suggested malignancy. At operation, the peritoneal cavity was found to contain a moderate amount of slightly turbid fluid. The stomach was distended with gas. A large mass just beneath the diaphragm over the aorta, pushed the cardiac end of the stomach toward the left, and infiltrated the lesser curvature. The regional lymph glands were enlarged. The condition was diagnosed as inoperable cancer. After the operation the patient had persistent hemorrhage and an irregular pulse. Death occurred eight hours after the operation. The pathologic diagnosis was gastric lymphosarcoma with metastases to the regional and retroperitoneal lymph glands and fat. The peritoneal fluid contained staphylococci and leucocytes.

CASE 2: This case was that of a man, aged 37 years, who gave a history of dull epigastric pain coming on about one half hour after meals for ten months. This pain gradually became more severe until, during the last five weeks, it had been a constant agony. The ingestion of meat aggravated the condition. The patient had lost 38 lbs. and was poorly nourished. Slight epigastric tenderness was found, but no palpable mass. The hemoglobin was 65 per cent and the red blood cells numbered 3,74,000. There was absence of free hydrochloric acid. The total gastric acidity was low. X-ray examination showed a definite annular constriction in the antrum. At operation the stomach appeared normal, but palpation revealed, 4 in. from the pylorus, a hard irregular mass which contracted the lumen until it scarcely admitted a finger tip. The regional lymph glands were enlarged. The gastric tumor, pylorus, and 12 in. of the duodenum were resected and posterior gastroenterostomy was done. Convalescence was complicated by bronchopneumonia. Twelve months after the operation the patient had gastric complaint, felt well, had worked for six months, weighed 33 lbs. and showed no abdominal masses or tenderness. The pathologic diagnosis was gastric lymphosarcoma. WALTER C. BUCKLEY, M.D.

Start F. N. G. Cancer of the Stomach. *Canada Med. J.* 9, 3, 221, 24.

The author emphasizes the fact that pain is often a late symptom in cancer of the stomach. An examination for this condition should be made when a patient complains of discomfort in the epigastrium occurring at irregular intervals without relation to food intake and associated with loss of energy. This investigation should include a complete history, physical examination, an X-ray examination, and all laboratory tests.

In the five years from 1907 to 1912 inclusive the author operated on eight cases of cancer of the stomach. In only four was it possible to perform gastroenterostomy. No radical operations were done.

From 1911 to 1916 inclusive twenty-nine cases were operated upon. In thirteen (45 per cent) a palliative gastroenterostomy was possible. In five (17 per cent) resection of the stomach was done. One of the patients treated by gastrectomy died of pneumonia three years later; two are still living, and two cannot be traced.

From 1917 to 1922 inclusive thirty-nine cases of gastric cancer were treated. In twelve palliative gastroenterostomy was done, and in thirteen (33 per cent) radical operation. Of the patients subjected to radical operation four died (one of delayed shock two days later, one of acute dilatation ten days later, one of pneumonia eleven days later, and one of secondaries in the liver two years later); one is now dying of secondaries in the retroperitoneal glands and eight are living and well.

The author advocates exploring lat cases under local anesthesia after pre-operative con-

ending of the administration of 5 per cent sodium bicarbonate solution with 1 per cent glucose by Murphy drip and gastric lavage the night before and the morning of the operation. To flag the operation hypodermoclysis of normal saline should be given into the axilla. The extent of the operation will depend on the condition found.

J. A. H. Macdonald M.D.

Dahl Iversen F. Ulcerated Carcinoma and Carcinomatous Ulcer Stimulating Round Ulcer (Ultero-cancer et cancer ulteri stimulantis Ulcere runde) *Acta med Scand* 9: 1 34

In two reported high malignancy are similar to series of gastric ulcer. At operation one presented the picture of a typical gastric ulcer situated upon the lesser curvature and microscopically showed carcinomatous change. In the other case hard infiltrated carcinoma thickened ulcerated surface was found.

Lovén F. I. M.D.

Walker J. J. Postoperative Obstruction of the Small Intestine *Surg Gynecol* 19: 10 45

Because of its present high mortality of about 30 per cent intestinal obstruction is much dreaded as any post-laparotomy complication. The treatment of acute ileus has not progressed as has the treatment of other abdominal conditions.

The high mortality of obstruction of the small intestine is due chiefly to the non-recognition of the seriousness of symptoms by the layman and the condition is hopeless, or the untimely onset of the condition following operation while the patient is still under the effects of the anæsthetic.

The author divides acute postoperative obstruction into three types that occur within a few days or weeks after operation and that coming on months or years after a laparotomy. The former occurs usually in patients with considerable infection, trauma or drainage and appears about the fifth day after operation. The latter is due to the extrudate produced after operation.

Adhesions are located here (trauma and infection have been greatest). This is usually in the ileum. Death is caused by the absorption of toxins.

The author is unable to describe conclusively typical symptoms or to differentiate other obscure abdominal conditions. In the differential diagnosis he relies upon the history especially as regards causative factors in the production of adhesions, and the development of the symptoms. In a case cited typical case of acute postoperative obstruction the diagnosis rested on the salient features of (1) vomiting without known cause first of stomach contents, later of bile stained fluid and later of yellow contents of the upper intestinal tract which was uncontrolled by the restriction of fluids by mouth and gastric lavage and (2) a decrease in the amount of flatus following repeated enemata. Prolapse of the colon is usually regrettably except in the

presence of beginning peritonitis. The pulse gradually increases in rapidly and in the last cases becomes weak and irregular. The mortality varies from 10 to 30 per cent, depending upon the duration of the obstruction. Recovery resulted in 50 per cent of the cases operated upon within the first eight hours.

The incision should be directed first to and the relief of the toxic condition with the least amount of shock. With recommended jejunostomy under local anesthesia, followed at a later date by operation for the relief of adhesion.

In the technique used by the author the incision is made in the midline of the upper left quadrant. The jejunum is located by the ligament of Treitz and the uppermost loop is grasped with the forceps. Two purse-string sutures are thrown around the forceps, an opening is made into the gut large enough to pass a 6 or 8 French self-retaining catheter and the purse-strings are tied. The catheter is then passed through a portion of the jejunum which is dropped down and sealed the gut beneath the catheter is removed this is done by cutting off the bulbous end and allowing it to drop into the gut. The fistula usually heals within three weeks. In only one case of series of twenty-eight as operation closure necessary.

The operation for the relief of the obstruction is undertaken after the toxic symptoms have subsided a rule which five days. When obstruction is caused by acute inflammation relief is usually obtained without further operative interference. In a series of sixteen cases in which jejunostomy as done for the relief of obstruction occurring within fourteen days after operation, recovery took place without further operative procedures. Jejunostomy is advocated as method which will lower the present high mortality rate of acute intestinal obstruction. WILLIAM E. SHACILETON M.D.

Quinn F. P. Chronic Duodenal Obstruction—Etiology, Symptoms, and Treatment. *Yale Med J & Med Rec* 9: 694, 695

Chronic duodenal obstruction causes symptoms arising from mild epigastric distress to severe headache, vomiting, and eriglo. The condition is often confused with gastric ulcer, gall bladder disease and appendicitis.

The most common symptoms are chronic epigastric distress which varies in time and duration but is usually one two or three hours after eating, nausea, the vomiting of often large quantities of contents containing bile, constipation, periodical vertigo and headache. The symptoms disappear after copious bile emesis. The attacks are separated by periods of normal digestion. The patient may be confined to bed more often by the severe headache than by the nausea.

This obstruction of the duodenum may be due to several different causes, but the upright position is responsible indirectly. A short mesentery will prevent the down and gravitation of the stenosis.

The blood vessels are the chief support of the mesentery which, if short must bear the entire weight of the intestines, this being the cause of the serious pathologic results.

The duodenojejunal juncture between the aorta and the superior mesenteric artery may cause constriction if the mesentery is short. An excess of fibrous tissue at this juncture causes further constriction.

A second cause of constriction is a mobile ascending colon with a mesentery largely supported by the colica media artery, which presses upon the third portion of the duodenum, causing obstruction and dilatation.

A short fetal mesentery will prevent the ascending colon and hepatic flexure from reaching their normal locations and thus cause colopnoia on the right side. In such cases both of the preceding factors may constrict the duodenum.

Since these conditions are congenital, the symptoms usually date from early childhood.

A positive diagnosis can be made with the X-ray by turning the patient sideways. Bulging or displacement of the duodenum may be associated with barium residue or delayed emptying.

In mild cases, recumbent position after meals, or elevation of the lower abdomen in the knee-chest or the Trendelenburg position will often allow the duodenal muscles to regain their tone.

In more advanced cases non-operative treatment includes rest in bed for a few weeks, the Trendelenburg position for several hours each day and the application of heat over the lower abdomen.

If surgery is advisable all the upper abdominal organs should be thoroughly examined at the time of the operation. Piloni of the right colon will usually be relieved by fixation. If dilatation extends to the jejunal juncture, duodenojejunostomy is the best treatment. Care must be taken not to injure the blood vessels or lymph glands. A description of the operation follows.

The author has been able to cure or relieve nearly 50 per cent of these cases.

MARCUS H. HORVAT, M.D.

Macrae, D. J. Chronic Duodenal and Gastric Ulcer Diagnosis. *J. Lawt.* 9:3 Feb., 36.

The technique of operation for chronic duodenal and gastric ulcer is a matter of choice and should be decided upon after the abdomen is opened. Mayo has said that of every ten cases of ulcers, six result from gastro-enterostomy and four are due to the fact that the operation is performed in the absence of any organic lesion to justify it.

The two conditions should not be discussed as one subject since the pathology, symptoms, and treatment are distinct. The pyloric white line and pyloric vein may be taken as the anatomical line of demarcation.

Gastric ulcer is a rare disease as compared with duodenal ulcer. Persons with gastric ulcer are usually emaciated, weak, and pale. The ulcer

varies greatly in appearance and sensation. In some cases it perforates the liver and pancreas. It is subject to cancerous degeneration, causes severe pain soon after eating, and calls for gastro-enterostomy combined with excision and cauterization of the ulcer.

Duodenal ulcer, on the other hand, is a common lesion and in many cases causes only mild symptoms. It varies little in size and appearance, and its symptoms commonly resemble those of other abdominal affections. Its pain is delayed. The treatment of choice is gastro-enterostomy without excision.

In cases of gastric ulcer the pain is typically regular shortly after the ingestion of food. In cases of duodenal ulcer there is a feeling of fullness and discomfort. Tenderness is not usually characteristic but a deep pain in the epigastrium boring through to the back suggests a lesion on the posterior surface. The sequence, food—comfort—pain—food—comfort—pain, is of the greatest importance in the diagnosis of gastric ulcer.

Vomiting is not an important diagnostic symptom except in marked tenesmus, and is given too much prominence in the textbooks.

Hæmorrhage is also given too much prominence in the literature. Blood is found in the stool or vomitus in less than 50 per cent of the cases of gastric ulcer. On the other hand it is one of the first and most important signs of carcinoma of the liver and has been the cause of many operations for supposed gastric ulcer.

When the history has been taken carefully little can be gained by a physical examination. The examination of the stomach contents should be discarded. Exploratory operation with examination of the ulcer is, of course, the only sure means of detecting the condition. The X-ray is of great value but should not be given too much importance.

The cause of ulcer is usually infectious from other parts. Ninety per cent of cases of so-called dyspepsia or other stomach troubles diagnosed as ulcer without the X-ray or surgery are not cases of ulcer. The two chief offenders are the appendix and gall bladder.

The pyloric valve has been mistaken by some inexperienced operators for ulcer. The white line was so diagnosed in a case in which uteropy proved the absence of ulcer.

The author states that an operation for ulcer should never be performed unless the ulcer can be seen and felt. All chronic ulcers should be removed if possible.

MARCUS H. HORVAT, M.D.

Bettman, R. B. and Blinn, D. M. Acute Intestinal Obstruction Caused by Fæcal Impaction in Meckel Diverticulum. *J. Am. Med. Ass.* 9:3 Dec., 35.

The case reported, that of a boy, 1 year of age, is of interest because of the rarity of the pathologic condition. Eight inches above the ileocecal valve Meckel diverticulum protruded from the ante-

mesenteric border of the intestines. Gentle pressure on the diverticulum caused the intestinal contents to slip into the collapsed ileum followed by gas and fluid causing a gurgling sound. The contents could be milked along the ileum into the large intestine. An attempt was made to obliterate the diverticulum. Recovery was uneventful. Later the diverticulum could not be seen by the X rays.

F. C. ROEMER, M.D.

McFarlan P. F. Intestinal Obstruction Following Acute Appendicitis and Peritonitis. *Ann. N. Y. Acad. Sci.* 1914.

The case reported was that of a 20-year-old man who was operated upon for acute appendicitis thirty hours after the acute onset of fever, generalized tenderness over the entire lower abdomen, and marked rigidity. There was no history of previous attacks. At operation a gangrenous appendix was removed and found to contain concretions. The pouch of Douglas contained considerable quantity of pus, and there was marked infection of all the peritoneal surfaces which came fast. A corrugated rubber drain was introduced into the pouch of Douglas.

The postoperative management included the administration of glucose and saline solution per rectum and 5 gr of morphine on the first night. The temperature was normal the following morning and never rose above 100 degrees F. The pulse was normal on the fifth day. From the second night the patient complained of intermittent pain and desired to move his bowels. He also showed slight distention. On the evening of the third day he was given a small turpentine enema, and on the fourth day castor oil and another turpentine enema. The bowels moved slightly that night and three times the next day aided by 5 gr of calomel hourly up to 5 gr and another enema. The distention increased constantly however and the discomfort continued. There was no vomiting. On the seventh and eighth days there were several small liquid movements. The distention had increased to such an extent that it stretched and opened the incision.

On the ninth day the abdomen was opened. The small intestine as found distended above the dense adhesion which bound it firmly to the mesentery of the pelvic colon. Following this operation there was distention of the stomach but this was relieved rapidly by gastric lavage. Thirty hours after the operation the patient was given pituitrin, and enema, and castor oil by the stomach tube. The next day he had copious liquid evacuation and for 5 days or more he was relieved but then became much worse. Fifteen days after the first operation the ileum was opened and a tube placed therein. This relieved the distention and the bowels moved freely 10 days later.

Slow recovery followed. By the end of the sixth week the patient left the hospital with the wounds healed but with hernia at the site of the appendix incision.

H. W. FROX, M.D.

Orsland A. Case of Cystic Appendicitis (Cystic diverticulum of appendix). *Bull. et Mem. Soc. de Chir. de Par.* 9 2, Avril, 1909.

Cases of cystic appendicitis are rare. The author reports one case of his own.

The lesions are of 2 principal types. Those of the first type which may be called mucocoeles, are due eventually to hypertrophy of the lymphoid tissue of the appendix the elements of which are distended by mucus. Those of the second type include diverticular cysts. Under the influence of inflammation and repair secondary cavities with debris of the mucosa of the primary cavity are formed. In the majority of cases there is a communication between the cavities of the cyst and the appendix. The diverticular cyst is said to be due to small peritoneal abscesses opening into the lumen of the appendix. Both heal after suppuration, the regenerated epithelium of the internal surface of the appendix then extending into the adjacent sac by karyokinemes.

The author's case was different from either of these usual types (mucocoele and diverticulum). Histologic examination showed atrophic appendicitis of the hyperemic type, chronic sclerotic lesion and traces of old strict inflammation. In addition to these signs of ordinary appendicitis, a solitary concretized diverticulum at the base and several submucous cystic formations were found. The diverticular cyst, as in the scarcity of the base.

Whatever may have been the pathogenesis of this outlying diverticular cyst, the appendicular cystic formations (of which there were four) are completely independent of the internal diverticulum, lacked epithelium, and because of their evident vascular origin and blood content constituted a distinct type of lesion.

W. A. BARN.

Phifer C. H. Hemorrhage Following Abdominal Operations; with Special Reference to Appendicectomy and Excluding Bleeding from the Stump. *Surg. Gynec. & Obst.* 1913, xxvii, 80.

Lukach found that enterorrhagia occurred once in every hundred operations for strangulated hernia. Postoperative hemorrhages after abdominal operations are rare. It may follow operations on the peritoneum, omentum, intestine, gall bladder, kidney, uterus, and ovaries, usually from the second to the tenth day. The author reports the case of a young girl subjected to appendectomy for subacute appendicitis who developed symptoms of hemorrhage and passed blood by the bowels on the second day. The operation was a second laparotomy as then done. The appendix stump was found to be in good condition. The bleeding caused on the fifth day following the usual treatment for hemorrhage. The author opinion on the hemorrhage in this case was due to thrombosis with embolism of the walls of the intestine followed by ulceration.

Phifer collected from the literature forty-three cases of postoperative hemorrhage following abdominal operations. There were 1 curative recoveries and twenty-one deaths. In one case report the

result is not stated. In five cases, in which there was one death, the bleeding was from the bowel in seven, in which there were two deaths, it occurred from the wound and in twenty-six cases, in which there were seventeen deaths, it occurred from the stomach. In three case reports the nature of the hemorrhage is not stated. In four instances ulcers were found in the stomach or duodenum.

Direct hemorrhage following appendectomy may occur from the superficial abdominal vessels, the meso appendix, the bowel, the abscess cavity, the deep epigastric and external iliac arteries, or the appendix stump.

Moyman states that postoperative hematoma is to be looked for especially after operations on the stomach, duodenum and bile passages. As responsible factors he mentions (1) the anesthetic (2) injury to the stomach, bowel resulting in ulceration (3) injury to the omentum causing thrombosis of the omentum followed by embolism in the walls of the stomach or bowel (von Eiselsberg) (4) aspeps (Rodman) and (5) reflex influence (May Robson).

The author regards trauma and embolism alone or combined as the cause of this condition.

J. A. H. MAOON, M.D.

Oudard and Jeun. Inguinal Hernia on the Right Side Following Appendectomy (Hernies inguinales droites après appendicectomie). *J. d. chir.* 9, 2, 22, 584.

The authors report nine cases of inguinal hernia on the right side, which occurred in adult males following appendectomy. The average time between the operation and the development of the hernia was thirteen months. The content of the hernial sac was chronically inflamed omentum. The sac was very thin and the omentum firmly attached by dense adhesions. The abdominal wall was thinned and weakened and the external abdominal ring enlarged. An impulse upon coughing was noted.

The adhesions of the omentum to the peritoneal wall no doubt occurred at the time of the attack of appendicitis or immediately after the operation and constituted probably the primary pathogenic factor in the development of the hernia. Direct injury of the muscles or the nerve supply of the muscles of the anterior abdominal wall caused the necessary weakening of resistance.

Clinically these herniae resemble the ordinary inguinal hernia, but the sac differs materially from that found in cases of congenital failure of the processus vaginalis to close completely. As rule herniotomy is necessary. LOUIS E. D. VAN M.D.

Bonnet: Residual Abscesses Opening into the Bladder by the Subperitoneal Route After the Removal of the Appendix (De l'ouverture dans la vessie par voie sous-péritonéale des abcès appendiculaires résiduels, après ablation de l'appendice). *Lyon chir.* 9, 114, 35.

Bonnet patient, man 40 years of age, was operated upon for gangrenous appendicitis. Three

weeks after the removal of the appendix a subperitoneal perirectal abscess developed to the left of the rectum and drained into the bladder.

Subperitoneal pelvic phlegmons in appendicitis are rare. Abscesses in the space of Retzius are more common; these also may open into the bladder.

In the case reported the gangrenous appendicitis caused peritonitis. A drain was placed in the Douglas sac and brought out at the lower end of the wound. During the days following, gangrenous of the aponeurosis developed and some of the infecting fluid from the peritoneum infiltrated the musculature. It is possible that the peritoneal fluid may have filtered into the lower pelvis between the peritoneum and the muscle planes. Bonnet therefore recommends the use of a peritoneal drain and suturing of the lips of the peritoneum to the aponeurotic planes to prevent infiltration of the subperitoneal cellular tissue. W. A. BARRY.

Trueblood, D. V. End-to-End Intestinal Anastomosis. An Experimental Study. *American Med.* 9, 3, 221, 7.

The operation described, which is still in its experimental stage, is applicable to the large and small bowels for end to end or end to side anastomosis. The diseased bowel is resected by means of small clamps and cautery. The two ends are approximated and the cauterized edges turned up so that continuous Cushing mattress suture can be introduced as close to the clamps as possible. This loose continuous suture is then pulled taut to approximate the serous surfaces of the posterior line of the anastomosis and then locked by taking an extra bite through the two approximated edges.

When an intestine is crushed by the crushing clamp the mucosa and smooth muscle tissue squeeze out from under the clamp, leaving the serosa and submucosa of the two walls pressed together into fibrous ribbon. When the clamps are removed these two ribbons stand up stiffly side by side. Both ends of the ribbons are caught in small hemostats and the ribbons held taut while one or more basting stitches are introduced.

The continuous Cushing mattress suture is continued around the bowel and the two ends are tied. The basting threads are then withdrawn. For reinforcement, especially at the mesenteric edge, *Habited mattress sutures* are introduced and continued all the way round where necessary. The rent in the mesentery is then closed. By grasping on each side of the anastomosis with the thumb and forefinger the approximated lips are separated and the size of the toms may be determined. The tissue held in the two small hemostats is cauterized away from the crushing clamp. The ribbon held within this clamp is united to that opposite.

The following conclusions are drawn:

1. The procedure described is a simple aseptic method of anastomotic suture in which the openings are closed by basting threads which after the anastomosis has been completed, are withdrawn.

It is applicable to the large and small intestines for almost any type of union in any location.
GABRIEL E. BELL, M.D.

Symmonds, C.: Gonorrheal Stricture of the Rectum.
Proc Roy Soc Med Lond 93 xvi, Sect Surg 3.

The type of structure to which Symmonds refers involves the lower 3 or 4 in. of the rectum including the anal margin and the entire circumference of the bowel. The bowel shows bands and bridges of indurated muscle separated by pockets, from the bottom of which fistulous tracts lead into the vagina or to the surface around the anus. Extreme narrowing occurs at several points and in advanced cases will not permit digital examination. Hard polypoid growths are found surrounding the anal margin. The patient states that a discharge from the rectum has persisted for many years.

The author reports seven cases, all those of women. In 1 case colostomy was followed by symptoms of toxic absorption and death. In one case following a digital examination, there was profuse diarrhea with blood and pus followed by collapse and death. In another case death occurred after the removal of the polypoid masses. In 4 cases the removal of the cicatricial areas was undertaken some time after colostomy. In one the results were successful but in the other it was impossible to reach healthy bowel. One case was relieved by colostomy.

The author was able to find specimens of thirty eight other cases in museums. Many of these museum specimens were labeled syphilitic origin.



Fig. Gonorrheal stricture of rectum in male.

In the treatment of this condition various procedures may be employed to meet certain indications. The use of bougies and division of the structure is limited because of the danger of perforation. Excision can be done only when the limits of the disease can be reached with the examining finger. Colostomy occupies a prominent place in the treatment. Cecostomy and appendicostomy may be advisable in selected cases. I. E. ROBINSON, M.D.

LIVER, GALL-BLADDER, PANCREAS, AND SPLEEN

Jones, J. F. K.: The Removal of a Retention Cyst from the Liver. *Ann Surg* 92, 1901, 68.

Non-parasitic liver cysts may be classified as:

1. Teratomatous or embryomatous cysts.

2. Pseudocysts, including cystic degeneration of carcinoma and sarcoma, softening of cirrhotic nodules, and cysts due to hemorrhage.

3. Lymphatic cysts which contain clear watery, yellowish fluid, thin albumen, large percentage of sodium chloride and no bile, are usually small, and are lined with endothelium.

4. Cystic degeneration of the liver associated with cystic kidneys, and also occasionally with cysts in the spleen, pancreas, or ovary. The cysts vary from microscopic to macroscopic size and are lined with epithelium ranging from low to columnar type. The dilated tubule is surrounded by fibrous tissue. The fluid is clear, albuminous, and free from bile and may show cholesterol, leucine blood, and crusts.

5. Cysts which arise from blood vessels.



Fig. Gonorrheal stricture of rectum in female.

6. Single or multiple cystadenomata which are lined with epithelium and contain clear or turbid albuminous, variously colored fluid.

7. Simple ciliated epithelial cysts, which are no larger than walnut, free from bile and located on the anterior surface of the liver near the suspensory ligament and along the inferior border.

8. Retention cysts, which are due to the engorgement of a bile duct and contain serous or mucous fluid or bile.

A non-parasitic cyst is usually lined with epithelium or endothelium.

A parasitic cyst may be ruled out by microscopic examination of the fluid and cyst wall. The fluid of a cyst containing a living hydatid is colorless; it contains sarcine seed, and sugar, but no albumin. In some cases there may be booklets, scolices, or daughter cysts. When the hydatid is dead the fluid becomes turbid, albuminous, and toxic. A hydatid cyst shows an outer capsule the ectocyst and an inner membrane, the endocyst which, with its daughter cyst, may be readily shelled out. The value of hydatid thrill in the differential diagnosis is very questionable. The various laboratory tests for hydatid disease—moistagmin, Abderhalden, and intradermic reactions, the complement-fixation, and cutaneous tests may be positive.

The diagnosis of non-parasitic liver cyst is seldom made before operation or autopsy. Such cysts are mistaken for hydatid or ovarian cysts, hydrocephalus, mesenteric cysts, parasitic cysts, tuberculous peritonitis, distended gall-bladder, sessile tumor of the liver, etc. Occasionally the x-ray may show relation of the cyst to the liver shadow or rule out the thoracic condition. It is important to differentiate the extrahepatic bile duct cysts, such as a diverticulum or choledochal dilatation of the common bile duct, which should be treated by primary choledochal-enterostomy.

Complications, such as rupture, hemorrhage, and suppuration, have been rare.

The treatment for both parasitic and non-parasitic cysts is similar. After the interior of the cyst has been disinfected and the cyst lining destroyed by chemical means, and, in cases of hydatid disease, the endocyst has been removed, the sac is stitched to the abdominal wall (marsupialization). The cyst may be drained or the abdominal wound closed without drainage. Occasionally an encapsulated cyst may be completely excised. In non-encapsulated cysts, because of the difficulty of approach and hemorrhage, very thin capsule excision of the sac is inadvisable. A pedicled cyst may be completely removed. If a non-parasitic cyst cannot be extirpated or marsupialized, the cyst wall may be anastomosed to the duodenum.

The author gives brief report of sixty-one cases of non-parasitic liver cysts operated upon surgically which have been reported in the literature, and includes one case of his own.

The author's patient was a 17-year-old girl with an oval abdominal swelling which projected in the

midline extended $1\frac{1}{2}$ in below the umbilicus, and above seemed lost under the transverse colon. The cyst could be moved only from side to side. The abdominal wall was movable over it. The liver was not palpable. Local pain was felt in the swelling. There was no jaundice.

At operation a grayish white ovoid cyst measuring 19 by 10 cm. which was attached to the anterior margin of the left lobe of the liver was completely excised. The raw liver edge was then cauterized and sutured with catgut. The patient made complete recovery.

The dark, greenish viscous fluid contained by the cyst was negative on microscopic examination and sterile on bacteriological examination. The cyst wall consisted of a thin layer of dense fibrous tissue lined by a single layer of low cuboidal epithelium which was partially desquamated. An occasional duct-like formation was found embedded in the cyst wall. The diagnosis was retention cyst of the liver.

WALTER C. BURKET, M.D.

Helvestine, F., Jr. Primary Carcinoma of the Liver. *J. Cancer Research*, 923 vii, 309.

The author considers the following questions: (1) whether the cancer is derived from the liver cells or from cells of the smaller bile ducts; (2) whether there is any relationship between the malignant growth and cirrhosis; (3) whether the growth takes place by gradual metamorphosis of liver cells into cancer cells, or by autocellular proliferation; and (4) whether the cancer is multicentric or unicentric in origin. Two cases are reported.

Because of the trabecular arrangement of the cells, the presence of capillary stroma, and the absence of proliferation of the bile-duct epithelium the carcinoma in the first case was classified a hepatoma.

Cirrhosis was not present in the liver tissue, and there was no hyperplasia of the liver cells. In spite of numerous points at which the cancer cells grew between parallel capillaries and were in direct continuity with the liver-cell trabeculae, there were no transitions between liver cells and cancer cells.

The growth was unicentric in origin, the primary focus being in the right lobe, from whence it grew by direct extension without using the portal system as a pathway.

The picture in the second case, case of secondary carcinoma of the liver was very similar to that observed in the first case. H. A. M. KASPER, M.D.

Boyd W. Studies in Gall-Bladder Pathology. *Br. J. Surg.* 923 x, 237.

Boyd states that in the past too much attention has been paid to the study of calculi and not enough to the study of the gall bladder itself. The investigation of the pathology of the gall bladder was carried out on material freshly brought from the operating room. The best results were obtained from study of frozen sections after fixation in formalin and subsequent study of paraffin sec-

tion. A toxy material was found to be entirely useless even when the tissue was studied as early as three hours after death.

By means of the dissecting microscope it was found that in marked cases of strawberry gall bladder the graceful, fragile, gossamer folds of mucosa are completely filled in appearance being loaded down by the dense opaque lipid much as a delicate birch tree might be weighed down by a load of snow. This yellow lipid material in the strawberry gall bladder is soluble in alcohol, ether and chloroform and is red with Schärlach R and Sudan III and black with osmic acid. To determine the nature of the lipid material more accurately sections were stained by Lorrain Smith Nil blue phosphate method. The conclusion was reached that the lipid in the mucosa was not neutral fat but whether it consisted of fatty acids or cholesterol was undecided.

Under the polarizing microscope newly formed crystals of cholesterol were found similar in appearance to the lipid material of the strawberry gall bladder. By using Mollenhuth's sulphuric acid reaction for cholesterol, it was found that the lipid gave the chemical and physical reactions of cholesterol ester. To determine the amount of lipid in the gall bladder mucosa, equal parts of absolute alcohol and ether were used in a hot extractor. The mucosa of 10 normal gall bladders contained

51 and 70 per cent of cholesterol by weight. The percentage of cholesterol by eight strawberry gall bladders varied between 34.60 and 60.54 per cent, the average being 47.46 per cent. The lipid deposit may be found distributed in any of the coats and to any depth. Its most common place of occurrence is the surface epithelium and the stroma of the villi.

Boyd et al. (1914) find the deposition of lipid has been produced experimentally in an animal. It will be impossible to state with certainty the factors which govern the formation of such deposits. He believes that the most probable factor is inflammation.

To determine the character and distribution of the lipid from the standpoint of comparative anatomy the gall bladders of fifteen dogs and five cats were examined. In dogs the lipid, as present in the mucosa, was in case but also confined to the epithelium the largest deposits being in the tips of the villi. In the cats, the lipid as present in scanty amount in the and absent in three. No lipid as found in the gall bladder of the cow, rabbit, guinea pig, or frog.

In order to determine the function of the gall bladder the abdomen of a dog was opened, a fine needle introduced into the gall bladder and after

distention of the bile an equal amount of 1 per cent iron ammonium citrate was injected. A series of dogs was used and after varying periods of time the gall bladder was removed and placed in fixative containing potassium ferrocyanide. Even after so short a time as half an hour there were

numerous blue granules in the epithelial cells and to a less extent in the stroma of the villi.

A study of cholesterol absorption was inconclusive.
W. E. BAUMANN, M.D.

Bottomley, J. T. Cholelithiasis; Cholecystectomy; Operative Injury to the Main Bile Duct; Primary End-to-End Suture; Postoperative Stricture of the Duct; Hepaticoduodenostomy; Recurrence of the Stricture; Second Hepaticoduodenostomy Over Rubber Tube. *Surg. Clin. N. Am.* 9:1 1900.

A woman 40 years of age was operated upon September 1, 1920, for stones in the gall bladder and cystic duct. A keratoplast was placed on the cystic duct and then resupplied at a deeper level. The cystic duct was apparently free from the common duct. Removal of the gall bladder was followed by crush of bile, and it was then noted that a portion of the common duct was included in the forceps. An end to end suture was done over a T-tube. Three weeks later the tube was removed, and five weeks after operation the fistula closed. Subsequently the patient became jaundiced, and one year after the first operation hepaticoduodenostomy was done. Six months later jaundice again developed, and on May 1, 1922, second hepaticoduodenostomy was performed. Since then the patient has been well.

This case illustrates the danger and consequences of operative injury of the main bile duct in procedures about the region of the gall bladder even in the hands of those accustomed to dealing with the difficulties and experienced in meeting the problems of surgery in this field. As these are the days of frequent cholecystectomies, such a case is worthy of note and comment because it sounds a warning and teaches a valuable lesson on operative repair of the injury done.

It is desirable that every attempt, successful or unsuccessful, to repair or reconstruct the main bile duct be recorded. It is probable that many cases have not been reported because the original surgeon felt it was the operator's and the attempt to report the result was unsuccessful.

Oscar E. KATZAR, M.D.

Kayser, A. B. Cholelithiasis, Cholecystitis, and Cholangitis. *J. Surg.* 9:1, 1901.

Intrahepatic stones are seldom seen in utero, the distance of the liver from intestinal infection and the almost continuous flow of bile rendering them less common than stones in the gall bladder.

Duct stones do not form in the ducts hepatic duct stones are probably also due to an intrahepatic source. Cystic duct and common duct stones are usually derived from the gall bladder or in rare cases, from an intrahepatic source.

Stones in the gall bladder generally arise there but may be intrahepatic in origin. Their size varies from that of millet seed to that of small hen's egg. Their number ranges from one to 7,000 and their color from alabaster white light or dark.

yellow, green, brown or black. Their shape may be spherical, oval or faceted. They consist of layers of cholesterol and bile pigment or calcium carbonate, or combination of all three. They are rare in infancy and childhood and in tropical climates. Their greatest frequency is after the fortieth year of age.

Factors in the production of stones are (1) slowing of the bile duct chiefly to narrowing of the duct, (2) ascending infection, and (3) excess cholesterol in the bile.

The gall bladder usually contains dark green, almost black, bile or pus.

Conditions favoring the formation of gall stones are (1) external pressure by constrictors, belts, etc. which causes kinking of the cystic duct and stagnation of the bile, (2) ptosis causing kinks and bile stagnation, (3) chronic catarrhal inflammation of the gall bladder, (4) chronic catarrhal gastroenteritis, papillitis or ascending common duct infection, (5) chronic circulatory, cardiac, and pulmonary disturbances causing venous engorgement, (6) hurried irregular meals, over eating and drinking, poorly cooked food, sedentary habits, poor hygienic surroundings and (7) certain acute and subacute infections, such as typhoid fever, gastro-enteritis and its sequelae, and catarrhal inflammation of the duodenum with ascending duct infection.

The hypertrophied walls of recovered gall bladder containing bile mucus and small stones may contract and completely empty.

Stones may remain in the gall bladder and ducts for years without causing symptoms, and may be found only by chance at laparotomy or autopsy.

In passing through inflammatory infiltrated ducts very small stones may cause violent pain. A small stone impacted in the cystic duct may cause colic. Various gastro-intestinal, renal, ureteral, pancreatic, and other intra-abdominal conditions may be mistaken for gall stone colic. The first pain may be due to pericholecystitis or a true peritonitis from extending infection or perforating ulcer. Violent contractions of catarrhal hypertrophied gall bladder may cause bladder distention.

Stones may remain in common duct stenoses with gall bladder hypertrophy and in catarrhal endocholecystitis, in which there is large bile secretion. In some cases they may pass through fistulae between the gall bladder and neighboring viscera. They usually do not wander from dilated incompetent gall bladder or in cases with little bile and marked concentric hypertrophy of the gall bladder. Extremely large stones do not wander. Impacted stones may lead to intraperitoneal rupture of the gall bladder or ducts.

The surgical procedure is based on the interpretation of macroscopic changes found at operation, viz.

The appearance of the adjacent peritoneum with regard to inflammation, exudate and adhesions.

1. Simple acute dilatation of the normal gall bladder by fresh bile. This generally indicates sudden,

recent acute stenosis or trauma of the common duct with normally open cystic and hepatic ducts.

2. Eccentric hypertrophy of the gall bladder wall. This indicates open cystic and hepatic ducts and moderate common duct stenosis for a period of some time.

3. Icterus in gall bladder cases. This means obstruction of the common duct with incompenetration of the gall bladder.

4. Reversal of the bile stream and ascending cholangitis. This occurs when there is hypertrophy of an infected gall bladder with common duct obstruction.

5. Simple atrophy of the gall-bladder. This points to an early catarrhal condition with narrowing of the cystic duct.

6. Concentric hypertrophy a change which occurs in long standing moderate stenosis of the common duct.

7. The condition of the liver. This is determined by inspection and palpation, and if necessary by aspiration, smears, and cultures.

8. The contents and the character of the wall of the gall bladder.

Hydrops cystidis usually results from simple cystic duct obstruction due to stone or low-grade inflammation. Empyema of the gall bladder arises from acute ascending inflammation.

With ascending common-duct infection there may be concomitant, ascending pancreatic duct infection. A case of clinical pancreatitis may recover after drainage of the gall bladder.

Drainage is more often indicated for a cholangitic liver and for the pancreas than for the gall bladder itself. Hepatic, pancreatic, and gastric symptoms clear up following drainage.

Cholecystectomy should be done with great hesitancy. Especially when there is stenosis of the common duct, it allows the bile to drain only poorly through the already diseased bile ducts. The removal of badly infected empyemic gall bladder may spread the infection.

The author describes the technique of cholecystostomy as follows:

Example the common duct wall off the gall bladder with hot wet pads aspirate open at the apex remove all the bile mucus, pus, and stones from the gall bladder and cystic duct explore the interior of the gall bladder with the finger for stones and diverticula pack the gall bladder.

Then $\frac{1}{2}$ in. of the top with iodoform gauze and extend the end of the gauze out through rubber tube drain fastened into the gall bladder with a double penetrating suture suture the gall bladder to the anterior parietal peritoneum and close the abdominal wound around the tube.

A permanent fistula will not result. Reformed stones can be easily removed through the anchored gall bladder. Do not drop the gall-bladder and tube back into the abdominal cavity as this permits an overflow of bile and results in adhesions which may complicate later operative treatment.

Cholangitic infections may ascend from catarrhal common duct, cystic duct and gall bladder infection, possibly with the formation of multiple intra-hepatic foci or abscesses. In some cases they may cause death. The author gives the histories of five such cases of cholangitis.

W. T. C. H. BRET, M.D.

Oliver, F. F. The Etiology of Gall-Stones. *J. Lab. & Clin. Med.* 9:3, 1914.

It has been noted that gall-stones are more common in women than in men. According to one investigator, infection and stagnation of bile are the probable steps in gall-stone formation, and absorption of alkaline material takes place with the production of an acid bile which leads to catarrh with an outpouring of mucus in such pigment and salt are precipitated stones may be found in any part of the biliary passages. The author states that he has never encountered an acid bile and that if his explanation is correct, he could find gall-stones composed largely of bile salt. In the cases of gall-stones reported in this article cystic duct obstruction was usually present and in few cases there was no common-duct obstruction with jaundice.

The urine was examined prior to examination of the urine and bile examined daily for fourteen to sixteen days after operation. All of the cases showed an increase in bile salt and pigment in the urine before operation. In some cases there was an enormous increase in bile salts above the normal coloring matter of the bile. In other cases the pigment predominated in the excretion of bile salt.

At operation the bile in each case was aseptically collected and tested for its various constituents. Quantitative determinations of the bile salt were made by treating the bile with about 1% alcohol and then filtering it. In cases of bilekites the bile-salt content was found to range from 1% of 1 per cent to 1 1/2 per cent. Cases of catarrhal bile cystitis relatively few in number were seen by the author in which the bile salt content of the bile was low. These were treated as potential gall-stone cases and responded well to cholecystostomy.

Following operation the bile and urine were daily collected and tested. After drainage of the gall bladder and the removal of the stones, the urine tended to show a decrease in bile salt and the bile showed corresponding increases. The removal of the obstruction did not lead to an immediate return to normal function on the part of the liver. In some cases normal limits were reached by the urine in six to eight days and by the bile in ten to fourteen days. About the fourth day after operation and for several days thereafter there was an increase in the urea content of the urine and decrease in its bile-salt content. Particularly noted by the author was the fact that the urine secretion seemed to run almost parallel with the secretion of bile.

By the findings reported herein it is plainly indicated that in such cases the bile salt content of the blood is increased. An increased content of cholesterol in the blood, together with decrease in the bile salt content of the bile, is on the formation of gall-stones. Bile obtained at operation from cases of gall-stones, after its sugar being examined chemically, was placed in test tubes sealed and allowed to stand for varying periods of time. Normal bile was also studied. The specimens of bile which were deficient in bile salt showed a deposit of cholesterol in the bottom of the tube. Normal bile remained free from cholesterol deposits.

From these observations it appears to the author that in cases of gall-stones and obstructive jaundice there is a disturbance of bile salt secretion and excretion manifested by an increase in bile salts in the urine and blood and decrease in the bile-salt content of the bile. As a result of the deficiency in the bile-salt content of the bile, cholesterol tends to settle out of solution. If the condition is not remedied early, gall-stones form the end result of the physico-chemical disturbance. Therefore cases of this character should be treated to restore the bile urine and blood to their normal physico-chemical state.

Grainger E. Bennett, M.D.

Gabree, H. The Gall Bladder Surgically Considered. *N. York M. J. & Med. Rec.* 9:3, 1914.

Gall-stones are found in 10 per cent of Europeans or adults but in 95 per cent of these cases they had caused no symptoms. The most constant symptom is pain in the gall bladder region.

The X-ray is often a source of error. A positive finding in 40 per cent of the cases is high. The duodenal tube and bucket are of great assistance for aspiration and in the X-ray examination. Chemical examination of the blood is of value. A high cholesterol content may indicate stones. Palpation is important as it reveals rigidity and tenderness. A carefully taken history is essential.

The author discusses the pathology in detail and gives cases to illustrate the different types. Inflammation may be present in cases of stones, but more often is present. The gall bladder may be distended below the umbilicus. In hydrophobic bile is present. The gall bladder may be so shrunken that it cannot be found. Adhesions causing the gall bladder to the surrounding organs may cause severe symptoms. Cancer is usually secondary. If it is primary gall-stones are associated with it. Gall-stones may rupture into any of the surrounding organs. Pykph. bile is usually fatal. These cases occur in 1% to 1.5%.

Leucopenia of about 4,000 and high fever 5 to 10 days is not a contraindication to operation.

The majority of cases with indolent symptoms and all postoperative cases are medical cases. Cholelithiasis is the most common indication for operation.

Hemorrhage and shock are not unusual in complicated cases. Stones may recur. Infection of the wound may cause postoperative peritonitis but this can be easily remedied by operation.

Gall bladder conditions may be associated with other pathologic conditions, such as appendicitis and fibromyoma. The attacks of colic are frequently aggravated by pregnancy and may disappear at term. A cholecystectomy may be done without interrupting the pregnancy. Jaundice is as often due to a surgical as a medical condition.

In uncomplicated cases the prognosis is as good as that of appendicitis.

In conclusion the author states that when the diagnosis of gall stones is established operation should be performed early to prevent serious complications.

MARCUS ROBERT M.D.

Winkel Wiesentreu, P. Primary Closure of the Abdominal Wall in Operations on the Biliary Ducts, with Special Consideration of Abdominal Tumors Operations on the Stomach and Duodenum (Ueber den primären Bauchdeckenverschluss bei den Operationen an den Gallenwegen unter besonderer Berücksichtigung gleichzeitiger Eingriffe am Magen und Zwölffingerdarm) *Arch f. kl. Chir.* 1922, cxi, 347.

The usual technique for cholecystectomy and drainage of the common bile duct as practiced in von Eiselsberg's clinic is described. The author warns against the use of needle ligatures in the region of the cystic artery in one case in which these were used an injury of the right branch of the hepatic artery was overlooked and led to fatal secondary hemorrhage. The suturing of flap of fat into the bed of frouble liver is found of value. A drain is always introduced next to the stump of gauze laid over the stump of the cystic duct or next to the drain of the common bile duct.

During the last two years, operation was performed in 143 cases of disease of the biliary region. In 19 cholecystectomy was done alone, and in seventeen there were simultaneous operations on the stomach and duodenum. Of the 9 cases, six ended in death, four deaths being due to post-operative peritonitis, one to postoperative hemorrhage, and one to embolism and pneumonia. These losses were due to tampon drainage except in one case in which choleperitonium follo ed the removal of a so called regenerated gall bladder with primary closure of the abdomen. In all of the four cases the biliary peritonitis originated in the bed of the liver. The ligation on the cystic duct failed to hold. Rupture of subcapsular biliary ducts in enterogenous cholangitis must also be considered. Bile entered the abdominal cavity in considerable number of cases even when the abdomen was closed primarily. Transplanted omentum gave good impermeability. Probing of the common bile duct and choledochotomy have been done less frequently than formerly but four transduodenal choledochotomies were successful. Primary closure of the abdominal wall was done fifteen times with good final results.

The advantages of primary closure are enumerated. The author examined the aspirated gall

bladder contents during the operation several portions of the last part of the gauze strip removed after several days, and the last part of the introduced drain. Even when the gall-bladder contents were infected, the moist strips were free from bacteria. Streptococci were cultured from strips removed on the ninth day only in one case in which a suppurating gall-bladder was removed. Strip drainage is therefore no longer used as a routine, but cases of primary closure are carefully selected.

Of the seventeen cases in which a simultaneous gastro-intestinal operation was performed the gall bladder was unexpectedly found diseased in fourteen. Primary closure was done in five, and strips and drain were introduced in twelve cases. On the basis of the results in this series the author concludes that gastro-intestinal operations should not be complicated by cholecystectomy unnecessarily but if a latent diseased gall bladder changed by non-inflammatory conditions must be extirpated, primary closure of the abdomen is indicated. If a seriously damaged gall bladder must be extirpated, gastro-intestinal operation is dangerous if the anastomosing suture remains in contact with the drain (Billroth I). It is therefore advisable to use the Billroth II procedure and in addition to cover the layer of sutures in the sacculus lying near the drain. Tension on the sutures used in the Billroth I technique is also sometimes dangerous. Primary closure of the abdomen is of value in simultaneous operations on the gastro-intestinal tract and gall bladder.

SCHWARTZ (2).

Morley J. Congenital Cyst of the Common Bile Duct with Report of Two Cases. *Brit J Surg.* 93, 43.

Congenital cyst of the common bile duct is a rare condition. Morley was able to collect only thirty-nine cases from the literature. This number includes two cases of his own.

The anatomical picture is constant, consisting of cystic dilatation of the upper portion of the common bile duct which enlarges slowly and progressively much like a sacular aneurism. The hepatic and cystic ducts may open into the cyst separately. The intrapancreatic and intramural portions of the common duct are not involved in the cystic dilatation. Wherever investigated, the lower end of the common duct has been found patent and usually in the medial wall of the cyst. It would appear that distention of the cyst by bile causes valvular obstruction in the common duct at the point where it is suddenly reduced to its normal caliber. Such an assumption would explain the jaundice which is so frequently associated with the condition and is often intermittent, remission being associated with diminution in the size of the cyst. The sacular nature of the dilatation, with normal ducts above and below the sac, forms a striking contrast to the diffuse dilatation of the bile ducts seen as a secondary result of gall stone obstruction or compression of the common duct by pancreatic tumor.

When first observed these cysts are usually about the size of a coconut. In the case reported by Morley there was marked obstruction of the third part of the duodenum by compression behind the superior mesenteric vessels, due to the downward thrust of the cyst on the small intestine and the root of the mesentery. Up to this point the duodenum was decidedly dilated, and beyond, it was contracted. The author believes that this duodenal ileus may account for the gastric distress recurring an hour or so after the ingestion of food.

The gall bladder has generally been found more or less empty but sometimes contains sufficient bile to form a small palpable swelling immediately above the large cyst.

The cyst wall varies in thickness in some cases it is very thin while in others it is thick, tough, and opaque. In Morley's case there was no mucous membrane lining and the wall was made up of dense fibrous tissue with a layer of endothelium on the outer surface where the peritoneum was attached.

The condition first appears between the ages of 14 and 30 years, but in two cases it is present at birth. Of the forty-one recorded cases, 88 per cent were those of females. Embryological development of the liver and bile ducts throws no light on the causative factors. Bidde suggests that these cysts are due to pancreatic rests in the walls of the common duct, the cells of which break down and thus originate the dilatation. There appears to be no evidence to warrant this conclusion.

The clinical manifestations consist of attacks of abdominal pain associated with tumor and usually some jaundice. The attacks recur at irregular intervals and vary from a sensation of fullness or acute indigestion about half an hour after eating to less frequent attacks of more severe colicky nature.

The tumor varies greatly in size. It may become so large as to fill almost the entire abdomen with the exception of the right iliac fossa. The size may change from time to time, but tends to become gradually larger.

Jaundice is present in most cases. In Morley's case it was shown by only a slight tinging of the sclera for a short time.

Two factors have combined to make the mortality very high. The first is delay of treatment until the patient cannot withstand a major operation. The second is failure on the part of the operator to recognize the condition and to adopt the proper operative procedure.

Temporary drainage of the cyst may be adopted as a palliative measure if the patient's condition is critical. However primary choledochoduodenostomy without drainage would appear to be the operation of choice whenever the patient's condition permits. In cases demanding only temporary drainage duct-intestine anastomosis should be done as soon as possible.

McLICKOCK HANCOCK M.D.

ROOS, P. and McNESTER, P. D. A Method for the Permanent Sterile Drainage of Intra-Abdominal Ducts as Applied to the Common Duct. *J. Exper. Med.* 93, LXXVII.

The many attempts to maintain rubber tubes in connection with the common ducts of animals to collect bile over considerable periods of time have been so uniformly unsuccessful as to warrant the belief that such tubes will always come away after a few days. In one of the authors' recent cases, in which a longer portion of the tube than usual was left within the peritoneal cavity the tube was found firmly fixed in place after a period of nearly two weeks and there was no sign of ascending infection with destruction of the duct wall next to the cannula such as had terminated previous observations. The tube was thinly but closely sheathed in omentum which met and joined the common duct, the entire collection apparatus being covered. Elsewhere in the peritoneal cavity there were no adhesions.

Acting on the suggestion presented the authors developed a method whereby the total bile can be collected in a sterile stat. day after day certainly for a period of months and probably for years. Their experiments were performed on dogs. A long drainage tube was inserted between the common duct and the opening in the abdominal wall. The tube employed was pliable near the cannula. Use was made also of curved glass tubes with the soft black rubber tubing connecting with the cannula on one limb, and pieces of duodenal tubing which was to pass through the abdominal wall on the other.

By the method described bile was collected from seventeen dogs for periods ranging up to three months.

The following conclusion is drawn:

The sheath of omentum which forms about a long rubber tube left within the peritoneal cavity provides such an efficient barrier to ascending infection that the tube can be employed for the permanent drainage of the common duct, whereas a short tube will come away after a few days.

GEORGE E. BARRY M.D.

MANN, F. C. and GIORDANO, A. S. The Bile Factor in Pancreatitis. *Arch. Surg.* 9, 3, 71.

The authors have investigated the bile factor in pancreatitis from two chief aspects: the anatomical and the experimental.

Two anatomical mechanisms have been suggested whereby bile can be passed into the pancreatic duct. One is based on the possibility that an obstruction could occur at the exit of the common bile duct so as to convert the two ducts into a continuous channel. The relationship of the common bile duct to the pancreatic duct and their mode of entrance into the duodenum in man were studied in order to determine the percentage of instances in which there could be an anatomical basis for the hypothesis mentioned. The data proved conclusively that the number of instances in which the anatomical arrangement in the relationship of the two ducts

would permit bile to pass into the pancreatic duct is very small. The other possibility that the sphincter at the duodenal end of the common bile duct could contract and convert the two ducts into a continuous channel, has also been investigated.

The data show that in most instances in man the sphincter is located at a point where contraction will close both ducts and will not convert them into a continuous channel, but in a very small percentage of instances a small bundle of muscle fibers is found in a position where possibly it could convert the two ducts into a continuous channel. Therefore while there is anatomical basis for the possibility of converting the two ducts into a continuous channel, either by mechanical obstruction or the action of a sphincter muscle, the percentage of instances in which this could occur is very small.

Three lines of investigation were followed:

1. Experiments to estimate the possible pressure the existing physiological mechanism could exert to inject bile into the pancreatic duct. This pressure was found to be relatively low.

Sterile bile was injected into the pancreatic duct at the maximum pressure that could occur in the common bile duct. This did not cause typical hemorrhagic pancreatitis, although definite damage of the pancreas sometimes occurred.

2. The common bile duct of goats (a species in which the main pancreatic duct opens into the common bile duct) was ligated. This did not produce acute pancreatitis.

The investigation has proved that there is an anatomical and physiological basis for the theory that reflux of bile may occur in the pancreatic duct. The evidence indicates that such reflux may be the cause of chronic pancreatitis. The number of instances in which the necessary anatomical conditions are present for this occurrence is very small. The possibility of bringing into play a physiological mechanism which can infiltrate the pancreas with sterile bile to an extent that produces acute pancreatitis is questionable. Granted that the necessary anatomical, physiological and pathological factors are present and that the reflux of sterile bile under such conditions causes pancreatitis, such a cause for the condition must be very rare, few cases being on record.

A reflux of bile could not have been the cause in any of the cases of acute pancreatitis reported by the authors. Attention is called to the fact that any mechanism which will allow bile to pass into the pancreatic duct will also obstruct the flow of pancreatic juice. Furthermore bile has been found in the pancreatic duct in the bases of acute pancreatitis. In all cases of pancreatitis the pathologist should examine the relationship of the two ducts to the duodenum and to each other to determine whether it is anatomically possible for bile to pass into the pancreatic duct. The data included in this article prove conclusively that we must look elsewhere for the explanation of the cause of most cases of pancreatitis.

Jones, D. F. Acute Pancreatitis. *Surg. Cl. N. Am.* 9, 6, 5.

Pancreatitis associated with infections of the biliary tract is an inflammation of the interstitial tissues due to infection. Frequently the infection is carried through the lymphatics of the biliary system. Acute pancreatic necrosis is a necrosis of the parenchymal cells due to retrojection of bile into the duct of Wirsung or of duodenal contents into the duct of Santorini. In the author's opinion these may be two distinct diseases. Interstitial pancreatitis may be acute or chronic, but pancreatic necrosis is always acute. Interstitial pancreatitis tends to become cured whatever operation is performed. Pancreatic necrosis causes death in 70 per cent of the cases.

In 1855 Bernard caused acute pancreatic necrosis by injecting bile and sweet oil into the pancreatic duct. In 1900 Oppe described a case of acute hemorrhagic pancreatitis in which a gall stone was impacted in the papilla of Vater so that the common duct was blocked and bile was regurgitated into the pancreatic duct. Oppe found that the anatomical arrangement of the ducts favors this condition in thirty of 100 persons, and Judd and Mann demonstrated such an arrangement in nine of 100 persons. Infected or changed bile will cause greater necrosis. Archibald showed that the sphincter of Oddi of the papilla of Vater will resist a pressure of 400 to 700 mm. of water. Judd and Mann found that the contraction of the gall-bladder adds a pressure of only 50 mm. of bile. The violent muscular effort of retching increases the pressure in the biliary system to 500 and 700 mm. of bile.

Pancreatitis has been found in 23.8 to 50 per cent of the cases of cholelithiasis. Gall stones were found in 50 per cent of forty-two cases of pancreatic necrosis in the Massachusetts General Hospital.

The author reviews fifty-six cases of pancreatic necrosis (forty-two from the Massachusetts General Hospital and fourteen of his own).

The condition is characterized by sudden severe epigastric pain associated with shock of greater or less intensity depending upon the extent of the lesion. After the first attack the pain may be felt also in the back. The patient becomes restless, nauseated and vomiting, re-persistent and bilious. The pulse is 100 to 160, often too rapid and too small to count. The temperature is subnormal for the first few hours, but gradually rises to 100 degrees F. The patient becomes cyanotic. The leucocyte count rises from normal to 5,000. The abdomen contains fluid and is very slightly tender all over. Definite localized tenderness extends from the gall bladder region toward the left, 4 times being more marked to the left of the spine. There may be tenderness also in the left costovertebral angle due to involvement of the tail of the pancreas.

The results of various methods of treatment in the fifty-six cases of acute pancreatic necrosis are summarized as follows.

Operation	1st	2nd	3rd	4th	5th
Final	Survived	Dead	Discharged	Recovery	Per cent
No operation	5	5		5	33
No drainage or drainage of abdominal cavity		10			33
Drainage of pancreas including abscess	29	25	4	3	23
Drainage of pancreas without abscess	20	5			75
Drainage of abscess alone					60
Drainage of biliary system	3				60
Drainage of biliary system and pancreas	3			3	100
Total mortality					46.7
Total mortality not including cases of abscess					7.3

The author reports five cases. In four gall stones were found. There was one death, that of a patient with stones in the papilla of Vater. In four cases the pain occurred after a heavy meal. In all of the cases the pancreas and the pancreatic capsule were drained through the gastrotrophic omentum; in addition cholecystostomy and drainage were done in two and cholecystectomy and drainage of the common duct in one. Operation relieved the pain at once. In some of the cases the pulse and temperature fell promptly.

Drainage of the fatty pancreatic capsule or the pancreas gives the best results. The author advises operation under novocaine and gas anesthesia as soon as the patient's condition will permit it. The ideal operation is drainage of the common duct, the fatty pancreatic capsule and the pancreas. If the common duct cannot be drained easily cholecystostomy should be done. If the patient's condition will allow only slight operative procedure, drainage of the fatty pancreatic capsule alone should be done. Drainage through the left loin has not proved satisfactory. In acute hemorrhagic pancreatitis, in which the patient's condition does not permit a prolonged operative procedure, cholecystectomy is indicated.

One patient who was operated upon seven years ago still wears a tube because of discharge of clear fluid which possibly comes from a pancreatic cyst. The fluid is not pancreatic secretion. For the first time this patient's urine now contains sugar.

WALTER C. BRIDGER, M.D.

Rigby, H. M. Acute Hemorrhagic Pancreatitis. Record Worm in Pancreatic Duct. *Bull. J. Surg.* 9:3, 4, 9.

The author reports the case of a woman 30 years of age who was seized with sudden severe pain in the abdomen and back. The pain was especially intense in the lower abdomen. Vomiting occurred frequently and the bowels did not move for two days. When the patient was admitted to the hospital the following day her condition was grave. The pulse was 30, small, and irregular. Respirations were 30 in the minute, and the temperature

was 100 degrees F. There was no history of gastric or menstrual disturbance. The abdominal wall was rigid. Tenderness was most marked over the lower part of the abdomen.

Operation revealed in the peritoneal cavity free fluid which was reddish and odorless. A second sacculum was made in the upper abdomen. Fat necrosis was seen and the pancreas was red, soft, and greatly swollen. Gauze tampons were passed down to the surface of the pancreas. The gall-bladder showed no disease. The patient died the next evening. At postmortem examination hemorrhagic pancreatitis and a round worm wedged in the ducts of Wirsung and Santorini were found. The terminal inch of the duct of Wirsung was bile-stained and there was some dilation of the common duct.

J. A. H. MACOY, M.D.

Kraus, L. Necrosis of the Pancreas. A Case of Total Segregation (Edu. Bearing for Location of the Pancreas). *Ann. Surg.* 1914, Fall (total Segregation). *When this is checked* 9: 330-337.

A man 46 years of age who had suffered for long time with lumbago and cramping in the stomach ultimately developed stone colic and became paralyzed. After a period of three months fluctuating tumor the size of an infant's head developed in the epigastrium. As there was also high temperature a diagnosis of abscess of the left lobe of the liver was made.

At operation, well-encapsulated retroperitoneal cyst containing liter of odorless pus was removed from the pancreas. The pancreas showed numerous sequestra throughout, measured 5 cm. in length, and weighed 90 gm. The cyst contents included tryptic and diastatic ferments. The patient recovered.

After the operation the assimilation of food was aided by the administration of pancreas. Transient symptoms of hyperthyroidism (protrusion of the eyes, mydriasis, tendency to attacks of perspiration, and tremor of the hands) which appeared during the early weeks of the after treatment were of interest. The question whether the sufficiency of the digestion should be attributed to vicarious appearance of the host function or to the remains of the pancreas was left unanswered. *Gaz. med.* (2).

Norris. Partial Obstruction of the Pancreatic Duct by Round Worms. *Bull. J. Surg.* 9:3, 4.

The presence of worms in the pancreatic duct is rare. In eastern countries the author has found them free in the peritoneal cavity in cases of perforation of the intestines. In one instance obstruction was caused by bunch of fifty round worms. The following case is cited.

The patient was girl years of age who, eight days before her admission to the hospital was seized with severe colicky pain in the abdomen and vomited once. The severe symptoms then subsided but dull pain in the epigastrium persisted. Similar attacks of pain occurred at irregular intervals.

On the patient's admission to the hospital her general condition was good. At examination an indefinite tender swelling was found in the epigastrium, and the overlying recti were somewhat rigid. The urine was normal. After observation for several days, during which time there were attacks of pain resembling renal or biliary colic, a laparotomy was performed. The stomach, gall-bladder and bile passages were normal, but the pancreas was found greatly enlarged. An incision was made in the pancreas from its head to its tail. When the pancreatic duct was opened, full-sized living round worm and a dead one were removed. The pancreatic incision was closed, the interrupted sutures and the abdomen closed around a cigarette drain passed down to the pancreas. Convalescence was uneventful.

J. A. H. MACCOW, M.D.

Orkow, I. I. *Surgery of the Pancreas. The Diagnosis and Treatment of Primary Carcinoma of the Pancreas, Particularly of the Body and Tail of the Gland (Zur Chirurgie des Pankreas. Zur Diagnostik und Therapie des primären Pankreascarcinoms insbesondere des Kopfes und des Schwanzes der Drüse).* *Stettin: Chir. Japre.* 1914. 92, 3.

The author has had three opportunities to operate on primary carcinoma of the pancreas. All of the three tumors were situated in the body (not in the head) of the gland. Every case was characterized by palpable tumor and very severe, colicky pains in the epigastrium independent of the taking of food.

Case. The patient was a man 55 years old who gave a history of pain for four months. An immobile nodular hard tumor was palpated in the epigastrium. Chemical examination of the stomach contents was negative. Urinalysis showed 10 per cent sugar. Slight jaundice was present. A diagnosis of cancer of the pancreas was made. At operation the diagnosis was confirmed. The tumor was situated in the body of the gland and inoperable. Death occurred four and one-half weeks after the operation.

Case. The patient was a woman 58 years old who had had epigastric pain for 10 months and attacks of diarrhea and vomiting. When seen by the author she showed pronounced cachexia but no jaundice. A hard, immobile tumor was palpated in the region of the stomach. The clinical diagnosis was carcinoma of the transverse colon. At exploratory laparotomy an inoperable carcinoma of the pancreas was found. Death occurred from exhaustion one and one-half months later.

Case 3 is particularly interesting because it was the first case in which pancreatotomy for carcinoma gave a successful result of long duration. The patient, a woman of 39 years, is still living nine years after the operation. Treatment was sought because of pain in the epigastrium of many years standing which was attributed to an old peptic ulcer. The perigastric tumor was discovered on June 9, 1906. The tumor was a hard, mobile, indurated tumor of rapid growth in the left hypochondrium. There was no glycosuria. The

patient was examined by Koerte, Bier, Israel and Kuttner. The retroperitoneal site of the tumor was determined by means of the X-ray and the diagnosis of tumor of the pancreas was made by Koerte.

On April 13, 1905, laparotomy was performed by the author. A hard nodular mobile tumor the size of two fists was discovered behind the stomach. This growth had permeated the entire body and tail and part of the head of the pancreas. The ductus choledochus ran behind the gland and outside it. After removal of the tumor, a piece of the head of the pancreas, 1 cm long and 3 cm wide remained. The duodenum was exposed in its entire periphery. The stump of the pancreas was sutured with a double row of sutures and covered with a free piece of omentum. The abdominal wound was closed around a small tampon.

For a short time during the healing of the wound there were bloody stools, but thereafter recovery was good. The microscopic diagnosis was cylindrical cell carcinoma. When the patient left the hospital on May 8 she was instructed to take a pancreatic ferment. Without this preparation she always experienced digestive disturbances, but when she continued to take it she was able to enjoy mixed diet without ill effects.

Up to 1908 her condition remained good, but riding in a carriage or in a railway train caused severe pain in the upper abdomen. In November, 1908, the author discovered a hard tumor the size of a pea in the left clavicle. Soon after this the patient left to make her home in Austria, where she is at the present time. The tumor of the clavicle which has grown rapidly is being treated with the roentgen rays. The latest report dated June 4, 1909, is fairly favorable as regards her general condition, and states that the tumor of the clavicle has somewhat decreased in size. The patient is not able to get along without the pancreatic medication and occasionally experiences colicky abdominal pain.

In a review of the literature on the diagnosis and treatment of primary cancer of the pancreas the author brings out the following important facts:

The most constant symptom is severe pain in the epigastrium calling to mind tabetic crises and termed by Dieulafoy *dramas pancréatiques* and by Schereschewsky *annihilating pains*. Another characteristic is the hard sometimes mobile sometimes immobile epigastric tumor in which pulsating movements may often be recognized. Loss of function of the pancreas is not always found in cases of tumor of the body or tail of the gland; glycosuria is very inconstant.

Operative treatment of tumors of the pancreas has not been very successful. According to Koerte (1902) the literature reports only sixteen resections and extirpations of tumors of the pancreas with six operative cures. Koerte's own case of cystadenoma of the pancreas remained cured for seven years after the extirpation. PETERS (2)

Eastman, J. R. A Safe Method for Drainage of I Itra-Abdominal Abscesses. *J Indiana State M* 1919 9 3 xvi, 6

Eastman describes a method for the draining of deep seated abdominal abscesses through flank incision.

The incision is made down to the peritoneum and the peritoneum is then carefully peeled off tract being thus made: the abscess outside of the peritoneum.

If it is not thought advisable to open the abscess at this time, the tract is loosely packed with gauze and a tube inserted in contact with the abscess wall dependence being placed on chemotaxis to cause rupture.

If the abscess does not open spontaneously it may be opened safely after adhesions have been formed around the gauze by passing long dressing forceps into it, through the drainage tube.

EDWIN R. TALBOT, M.D.

SURGERY OF THE EXTREMITIES

CONDITIONS OF THE BONES, JOINTS, MUSCLES, TENDONS, ETC.

Bloodgood, J. C. The Diagnosis and Treatment of Bone Lesions. A Brief Summary of the Salient Features. *Am J Roentgenol* 9 3 4

This article gives brief the salient facts of lected by the author from over 1,000 records of bone lesions. The review includes only cases of tuberculous and pyogenic osteomyelitis which suggest periosteal or central malignant lesions clinically and in the roentgenogram.

With regard to the diagnosis from the roentgen standpoint stress is laid upon the importance of examining the corresponding bone. If as the diseased bone to avoid mistaking anomalies for disease. After Jukes roentgen examinations are valuable to show possible unsuspected fractures and to reveal pre-existing osseous lesions. The roentgenogram is also a record for comparison. If the trauma excites benign or malignant pathologic process. When the roentgen examination reveals one lesion it is still to examine all the other bones to determine whether there are others. This may give valuable information in differentiating between primary sarcoma and such conditions as metastatic carcinoma, multiple myeloma, multiple bone cysts, and chondroma. The demonstration of multiple exostoses excludes benign osteosarcoma. Roentgen examinations of the chest should be routine procedure in cases of bone lesions in order that early metastases may be discovered. The discovery of pulmonary tuberculosis may suggest likelihood in determining the nature of doubtful bone lesion.

Palpation gives considerable information. When the periosteal bone formation is distinctly bony, malignancy is improbable. When a soft part tumor about the bone is palpated and the roentgenogram shows it to be composed only partly of new periosteal bone, there is definite evidence that the lesion is periosteal or soft part lesion with secondary involvement of bone.

Spindle shaped periosteal growths surrounding the bone which the older textbooks and literature attributed are pathognomonic of sarcoma, the author does not regard pathognomonic of this condition. Perforation and destruction of the bone shell is not indicative of malignancy. Calcified areas in the

soft parts outside the involved bone and a definite clear area between them and the bone are suggestive of tuberculous and giant sarcoma.

The diagnosis of bone lesions from the roentgenogram alone is gray mist. The clinical history and other laboratory examinations, such as the Wassermann test, a complete blood examination, an examination of the urine for Bence Jones bodies, and a search for foci of infection are of great importance.

When the roentgenogram shows an evident periosteal lesion and the Wassermann test is negative, at least one dose of intravenous bismuth should be given. The author has had four cases in which this procedure resulted in rapid improvement and permanent cure.

As regards the localization of the lesion, certain generalizations are possible. In recent study of all the central and periosteal lesions of the phalanges, a single example of central sarcoma of phalanx and no case of periosteal sarcoma was found. Of the central lesions of the lower end of the radius, 90 per cent are giant cell tumors. Periosteal and central lesions of the metacarpal, metatarsal and tarsal bones are very rarely malignant up to the present time no lesion of carpal bone not due to inflammation (usually tuberculosis) has been found.

If the roentgen examination shows a distinct central lesion with definite bone shell and with or without fracture and no extra-osseous soft part lesion, if palpation reveals nothing and if the patient is under 5 years of age, it is very probable that the condition is bone cyst. The next possibility is the giant cell tumor, rarely chondroma and in very few instances, tuberculosis. Operation is not indicated, especially when there is pathologic fracture. The fracture usually cures the bone cyst and subsequent roentgenograms will reveal rapid ossification, not only of the fracture but also of the central area of destruction. When rapid ossification does not show, operation is indicated. Once operation will hasten the healing of the bone cyst and is the best treatment for the giant cell tumor or chondroma. When the roentgenogram shows no fracture, operation promises more rapid and permanent ossification if the lesion proves to be bone cyst and is the best treatment for the giant cell tumor and chondroma.

If the patient is over 5 years of age and the roentgenogram shows a central lesion with a definite bony shell, with or without fracture, nothing is to be gained by delay. Sarcoma cannot be excluded. The order of frequency of central bone lesions after the age of 15 years is as follows: benign giant cell tumor, the recent and the old unhealed bone cyst, sarcoma, chondroma, myxoma.

The author's experience to date seems to show that roentgen and radium treatment cannot be expected to affect the pathologic process through a bone shell, and that radiation is employed largely for conditions in which it is neither necessary nor valuable.

As regards the method of attacking the single central bone lesion, Bloodgood states that the purpose of operation should be to remove and destroy the pathologic tissue within the bone shell by a technique which will prevent, as far as possible, the implantation of tumor tissue into the soft parts. This is best done by thermal and chemical cauterization. If the lesion is probably sarcoma, the implantation of radium into the cavity and post-operative radium or roentgen treatment is advisable. Immediate bone transplantation into large cavities has been unfavorable in the author's experience except in bone cyst, but in this condition it is not necessary.

A cure of central sarcoma is obtained after amputation in less than 1 per cent of the cases. Because of this fact and because it is the rare central lesion and often difficult to differentiate from variants of the bone cyst and the giant-cell tumor, the treatment described seems justifiable when there is a central tumor of bone with an intact bone shell, even when the gross appearance at operation and the microscopic picture strongly suggest sarcoma.

The problem of diagnosis and the plan of attack are essentially different in periosteal bone lesions as compared with central bone lesions. Age is of diagnostic significance. It is very difficult in many instances to distinguish the periosteal sarcoma with or without bone formation from the benign periosteal lesions with or without bone formation.

Up to the present time the author has obtained only two permanent cures after amputation for periosteal sarcoma. Recently he has had two cases which reacted favorably to radium. In one, the improvement has continued for two years; in the other there has been recurrence after eighteen months, but radium treatment is again causing improvement. Because of this experience Bloodgood believes that every case should receive salvarsan first and then roentgen and radium treatment. If there is no improvement, amputation should not be done unless microscopic diagnosis is made, except in cases of periosteal sarcoma in which positive diagnosis from the roentgenogram is possible.

Recent experience has demonstrated that the number of benign periosteal lesions of single bones resembling periosteal sarcoma in the roentgeno-

gram and clinically is increasing. As cures of periosteal sarcoma are so infrequent even after amputation and as the possibility of error is still great, amputation should be considered only when all other measures have failed. Especially in cases of traumatic and infectious ossifying periosteitis difficult to differentiate from sarcoma there is always possibility of spontaneous recovery.

ADOLPH HARTMAN, M.D.

Wegman: The Traumatic New Formation of Bone
Myositis Ossificans and Parosteal Bone Cysts
(Über traumatische Knochenbildung, Myositis
ossificans und parosteale Knochenzysten.) *Beit.
klin. Chir.* 922, CXXVI, 43.

On the basis of the findings in four cases the author attempted to determine (1) whether the source of origin of the ossification is the periosteum or the muscle connective tissue, (2) what conditions favor the ossification, and (3) whether the final result is a true new formation, an inflammatory process, or a degeneration.

In the first of the four cases there was formation of bone within the muscle after a chemical injury due to salvarsan and an effusion of blood into the tissues. The injury did not affect the periosteum of the humerus in this case, at any rate not so as to cause the penetration of small pieces of periosteum into the muscle. The matrix of the bone formation therefore must have been the muscle connective tissue which showed proliferative processes with degeneration of the fibers and transition stages to newly formed spongy bone.

The second and third cases showed very advanced changes in close relationship to the bone processes. The fact that a considerable area of the femur was stripped of periosteum indicated that the periosteum was a factor in the new formation of bone. On the other hand, as the microscopic and macroscopic findings were very similar to those observed in the first case, the muscle connective tissue may have been in part responsible.

The fourth case was similar to Cases 2 and 3. The striking feature in this instance was the fact that the ossification was found far from any normal bone and in the center of a peculiar germinal tissue. The origin of the latter might have been the muscle connective tissue. The periosteum and the muscle connective tissue were probably the bone-forming matrix.

The main mass of bone in the last three cases was attached to the femur. In the fourth case the ossification originated in the granulation tissue. It is probable, therefore, that the new formation of bone proceeds more intensively and rapidly from the periosteum than from the connective tissue. In the process of ossification, cells with large vesicle-like nuclei are formed, and these, through the breaking down of their protoplasm, unite to form slowly calcifying giant cells.

In every case the exciting cause of the ossification was trauma—in the first case the unsuccessful

The diagnosis is usually easy because there is no other congenital disease in which multiple fractures occur. Rickets and syphilis occasionally cause fractures in young children but it is rare that more than two or three fractures occur in the same person as a result of these affections.

The treatment recommended is care to prevent deformities and the administration of cod liver oil and phosphorus. Care to prevent fractures is the most important single factor in the treatment of osteopetrosis.

PHILIP LEWIS, M.D.

Davis, G. G. Osteosclerosis Fragilis Generalisata. Marmorirnschen-Albers-Schoenberg Disease. *Arch. Surg.* 9: 449.

The author reports a very interesting case of bone pathology, the tenth case of the kind to be reported in any language and the first to be reported in English.

The patient was a boy of 11 years who entered the hospital with fracture of the right leg, the result of a rather trivial injury. Previously he had had other fractures following slight trauma. The roentgen ray study of the entire skeleton revealed generalized abnormality of the bone structure characterized by marked, irregularly increased density of some portions of the bones and rarefaction in other areas. In the long bones, the tendency was toward marked narrowing of the medullary canals in the middle third, due to thickening of the cortex, the ends of the shaft presenting an expanded appearance and showing thinning of the cortex and coarsely mottled effect due to increased density in the marrow cavity. The small bones, such as the vertebrae, carpal, and tarsal, presented a generalized increased density with absence of bone structure. The epiphyseal lines were all present and normal in width, but had slightly irregular margins. The epiphyses showed general increase of density with absence of bony structure but appeared normal in size and outline.

PHILIP LEWIS, M.D.

Ghorale, R. K. A Case of Congenital Osteosclerosis. *Bull. Johns H. Pkns Hosp.* Balt. 9: 444.

A careful review of the literature failed to reveal a case in which the condition described was diagnosed during life. Several cases reported were diagnosed at autopsy as osteosclerosis, the condition being regarded as congenital in some and as associated with a disturbance of the blood-forming organs in others.

The author gives the history and the findings of the physical examination in his own case and includes several illustrations. On first seeing the case in the dispensary, he regarded it as being epiphyseal separation of the head of the left femur. Roentgenograms of the pelvis taken at that time showed a peculiar density of the bones. Several roentgenograms made later confirmed this finding. Roentgenograms of all the bones revealed

practically the same condition throughout the entire skeleton. In addition the vertebral bodies showed marked density at both poles, there was thickening of the cortex of the ribs, the marrow cavity was apparently obliterated at certain points and there was definite thickening of the cortex, especially in the distal portion, of the long bones, particularly the femora and humeri. The skull was thicker than normal. In both femoral necks, and especially in one, there seemed to be a breaking down of the bone just below the epiphysis, the latter structure being displaced inward and downward.

The bones of the patient's mother were shown by the X-ray to be normal but the father's bones were exactly like those of the child.

PHILIP LEWIS, M.D.

Cong, S. H. The Pathology of Osteitis Deformans, Paget Disease. *J. Bone & Joint Surg.* 9: 15.

The author gives a very complete description of the pathology of osteitis deformans, having had the opportunity to study the bones and the tissues of organs in a case whose clinical history had already been completely reported.

Unfortunately neither the pituitary gland nor the skull bones could be obtained, but otherwise the report is complete. This abstract will be confined chiefly to the bony pathology.

The author concludes that osteitis deformans presents osteoporosis with disappearance of bone by lacunar absorption and chemical (vital fluid) dissolution, accompanied by new formation of bone. In the case under discussion the new formation was not so marked as in the cases reported by others. The active process seemed to have been completed.

There was evidence of breaking down of bone—that is, bending of trabeculae crushing down on neighboring cancelli, obliterating some canals and assisting in the formation of others.

There was marked vascular degeneration with varicose vessels, thromboses, congestion, leakage with edema and minute hemorrhages. The surrounding tissues were modified to a certain extent as evidenced by changes in vessels, nerves, muscles, and tendons. It is suggested that this was due to bone absorption throwing them in contact with accustomed (unusual) neighboring material. In the case of muscle attachments the distortion and microscopic changes were especially marked.

In certain areas the bone itself showed reversion to fibrous type: there was metaplasia to myxomatous tissue and the marrow was myxomatous, fibrous, or cellular, the bone cells taking part in the process. In some of the bones there was what appeared to be a reversion of marrow to the embryonic type showing small and large round cells, megakaryocytes, and normoblasts. Possibly this was compensatory. The bone-cell multiplication was an essential part of the disease.

The pathologic changes arose in the different bones and in various parts of the same bone.

There was evidence of analogous conditions in bone in the organs, tissues, and nerves. This was most evident in the tendency to overgrowth cell multiplication. The circulation had been erratic for years, with intermittent compensation and the reverse, the bones, organs, and soft parts being correspondingly affected. The changes involved corresponded to those found in chronic inflammation or in resolution of acute inflammation where repair is the most important factor.

The author believes that in this condition there is primary blood vessel pathology similar to that in hereditary or acquired syphilis, with accompanying bone changes such as are found on a small scale in chronic passive congestion and infections of a chronic character. It is not at all improbable that malaria, typhoid, malarial, cryptosporid, or parasites may produce such vascular lesions with local and general osteitis deformans.

The article is supplemented by complete bibliography and an excellent discussion by Morrison and Myers.

PHILIP LEWIN, M.D.

Whita, E. F. G.: Osteitis Deformans in Monkeys. *Arch Int Med* 922, xxx, 790.

The author reports three very interesting cases of osteitis deformans found among 6570 consecutive postmortem examinations in the laboratory of the Philadelphia Zoological Society. These were the cases of three monkeys, a red woolly monkey, a black spider monkey and a brown cebus monkey. The pathologic reports are given in detail. The cases are of interest because:

They are typical of Paget's disease as it has been found in man.

They show the same general type of inorganic metabolism as that exhibited in man.

Alkali hunger was shown by one of the monkeys and in two clinical cases before the development of the deformity and disappeared after the deformity was established.

The disease developed in animals fed on diet insufficient in its inorganic and vitamin content, to which an excess of calcium was added.

From his study White concludes that Paget's disease may be merely one stage of a deficiency disease that it may be reparative response through (1) a disordered neurotrophic mechanism (2) per-
eption of the calcium governing glands which have been disturbed by an improperly balanced diet, or (3) the addition of an excess of calcium to the diet of an animal whose body finds are unable to hold it in solution because of faulty diet or other factors.

PHILIP LEWIN, M.D.

Frieberg, A. H.: Osteochondritis Dissecans. *J Bone & Joint Surg* 923, xxx, 8.

The author reviews the literature and reports four cases of osteochondritis dissecans of the knee and one case in which the elbow was involved. While for the present, at least, this interesting condition must be considered result of trauma,

Frieberg believes it is only an indirect result. He suggests that it is brought about through the coincidence of several factors: the terminal arteries present in the end of the femur may be injured by an abnormally long tibial spine; when the knee is in a position of flexion and the tibia is rotated outwardly Frieberg found by examination of cadavers that when the knee is flexed and the tibia rotated outward even a normal tibial spine may be ready to impinge on the posterior cruciate ligament. If either tubercle of the tibial spine is abnormally long, it is conceivable that impingement might take place with sufficient force to cause vascular injury resulting in the death and separation of the portion of bone involved. The author draws attention to the fact that in one case, as in a case reported by him in 1910, the opposite knee became affected later.

The treatment is rhithotomy with the removal of all loose bodies. An X-ray examination should be made of every joint lesion of subacute or chronic character as by this means diagnosis can be made before locking has occurred or a loose body has been felt at point distant from its bed. Experience has shown that loose bodies are for a time attached by pedicle and operation may then be performed through comparatively small opening. When the bodies have wandered from the site of their formation the procedure is more difficult.

J. C. WILSON, M.D.

Winslow, N.: Suppurative Osteomyelitis Due to the Colon Bacillus. *J Surg* 922, lxxv, 695.

This report of a case is particularly interesting as it deals with a comparatively rare condition. Winslow also reviews six other cases of osteomyelitis. In one the condition followed a gunshot fracture of the tibia and therefore did not represent the ordinary type of osteomyelitis. As in five cases there had been previous attack of what seemed to be typhoid fever it is possible that the organisms recovered might have been those responsible for the typhoid like illness, since both of these organisms belong to the same family group.

All age groups were represented. The structures involved were the femur and the costal cartilage, in three cases each. In two cases there was mixed infection and both of these patients died.

Winslow's case began as typical attack of osteomyelitis, an abscess developing rupturing spontaneously and apparently healing before the patient was admitted to the hospital. From the drainage incision there escaped large amount of foul smelling, thick, yellowish pus from which the colon bacillus was recovered. Winslow does not believe there was any connection between the attack of typhoid fever twenty years before and the osteomyelitis.

DREW W. CARR, M.D.

Thompson, J. E.: Tumors of Bone. *Surg Clin N Am* 923, 403.

The author mentions the recent advances in the study of tumors of bone and states that the majority

of necrosis specimens labeled giant cell sarcoma are so known to be benign giant-cell tumors.

Paget in 1851 described very clearly a group of central tumors of bone which he called myeloid tumors, and regarding which he said, they are not apt to recur after complete removal, nor have they in general, any features of malignant disease.

Thompson reports three cases of myeloma, or benign giant-cell tumor. In one, amputation was done. The other two were treated by curetting. The author believes that the amputation was unnecessary and that amputation is done too frequently in such cases on the erroneous diagnosis of malignancy.

Another case reported was case of erythematous osteogenic sarcoma of the femur. Amputation was done below the trochanters. Six years after the operation the patient reported perfect health.

The cellular elements from which osteogenic sarcoma may arise are present in the periosteum in the bone and to less degree in the marrow cavity. Round celled sarcoma of erythematous type may arise from the lymphocytic cells in the marrow and frequently mask their appearance in several bones simultaneously.

DANIEL H. LEVINTHAL, M.D.

Bloodgood, J. C. Bone Tumors, Metastases to the Lungs from Pure Myxoma. *A. Surg.* 9 3, 1899, 66.

T cases reported by Bloodgood establish fairly definitely the fact that pure myxomata may give rise to metastases as well as to local recurrence.

In the first case the metastases to the lung appeared about ten years after the first operation, and in the second, four and one half years afterward which is late as compared with the metastases of true sarcoma of bone. In Bloodgood's opinion there is pure myxoma of bone with distinct gross and microscopic appearance. Grossly acid, gelatinous tapeworm-like material, which may be blood stained erodes under pressure from the bone capsule of the tumor.

Microscopically frozen sections are more characteristic than those made after long hardening. The pure myxoma is rare. Frequently the tumor is mixed with cartilage but more often the sarcoma. Osteitis fibrosa and pure chondroma has been diagnosed as myxoma or myxochondroma. Osteitis fibrosa is distinctly benign while pure chondroma recurs only when improperly or incompletely removed. There is nothing characteristic in the clinical or X-ray picture of either the periosteal or the central lesion. Therefore if an exploratory incision is made for diagnosis, the possibility of myxoma should always be borne in mind and the electric cautery and chemical cauterization with pure carbolic acid followed by alcohol and 50 per cent solution of zinc chloride should be employed to prevent transplantation of the tumor tissue.

ROBERT S. REICH, M.D.

Hansen O. S. Multiple Myeloma. *J. Am. Med. Assn.* 9, 1913, 2030.

The author reports seven cases of multiple myeloma, four in men and three in women. The average age at onset was 35 years. The duration of symptoms from their onset to death ranged from three to twelve months, the average being seven and one-half months.

Bence Jones protein was found in the urine in only one of the seven cases after many tests had been negative. In several the diagnosis was not made before autopsy. The author believes that in multiple myeloma should be suspected in cases of backache or pain in the bones which cannot be explained satisfactorily otherwise.

The test for Bence-Jones protein should be repeated as the absence of this protein does not speak against a diagnosis of myeloma.

PHILIP LEWIS, M.D.

Brown K. P. A Case of Solitary Cyst in the Humerus. *Edinburgh M. J.* 9, 1913, 306.

The case reported was that of a woman 3 years of age who was admitted to the hospital with fracture of the lower end of the humerus. A few weeks after cold in October 9, the patient had complained of an ache which radiated from the elbow to the shoulder and occurred at irregular intervals. About June, 03 she felt her left arm crack while hanging up clothes. The Wassermann test was negative.

Examination of the left arm revealed a hard, smooth fusiform swelling $\frac{1}{2}$ in in length at the lower third of the humerus. No cracking could be elicited. The X-ray revealed a cystic area in the center of the bone with partial destruction of the compact bone and fracture through this weakened area. Roentgenograms of the right humerus, the femora, and the tibiae were negative.

The cyst contents were curetted and the bony wall surrounding the cavity left smooth.

Microscopic examination of the cyst contents revealed many bony spicules surrounded by cellular fibrous tissue. A small area of hyaline cartilage was also seen.

Bone cysts are related to osteitis fibrosa. They occur most frequently in the humerus, tibia, and femur usually near the epiphyseal cartilage. The lower end of the humerus is rarely involved. The etiology is obscure.

The diagnosis is based upon the history, microscopic examination and roentgenogram.

JOHN MITCHELL, M.D.

Stewart, M. J. A Large Myeloid Sarcoma of the Radius in Which the Tumor is White Through out. *Bull. J. Surg.* 9 3, 1913.

Myeloid sarcomata are generally of a maroon color. This may be prevalent throughout the whole tumor or affect only part of it. The red area contains numerous multinucleated giant cells and red blood corpuscles, or hemorrhagic extravasations.

Some of the white portions are highly cellular actively proliferating myeloid tissue with large number of giant cells.

Page describes myeloid sarcoma in these words:

On section, the cut surfaces appear smooth uniform, compact shining succulent, with a yellowish, not a creamy fluid. A peculiar appearance is commonly given to these tumors by the cut surface presenting blotches of dark or livid crimson or of a brownish or brighter blood-color or of pale pink, or of all these tints mingled, on the grayish-white or greenish color base. This is the character by which, I think, they may best be recognized with the naked eye, though there are diversities in the extent, and even in the existence of the blotching. The tumor may be all pale, or have only a few points of ruddy blotching; or the cut surface may be nearly all suffused, or even the whole substance may have a dull modena or crimson tinge, like the ruddy color of heart or that of the parenchyma of a spleen.

The author reports the case of a girl 6 years of age who had had a swelling of the distal half of the left forearm for three years. During the last three months the growth of the tumor had been rapid. History of injury was obtained. The tumor seemed to spring from the radius. It was firm, regular and not tender. X-ray examination showed its site to be the distal half of the radial diaphysis. The central part contained no bone. The part excised for study was white and contained numerous osteoclast like giant cells. The surrounding muscle and other soft parts had been invaded.

Amputation was done. The axillary glands were not touched as the patient suffered severe shock. When she was discharged from the hospital no axillary glands were palpable.

The microscopic structure of the specimen was that of typical myeloid sarcoma. The preponderating tissue had mixed and spindle cell ground work with many multinucleated giant cells of the osteoclast type. There are many areas of acellular tissue.

Whether they are endosteal or periosteal sarcoma of bone which are huge are almost invariably highly malignant. The presence of enlarged axillary glands on the same side as the tumor suggests malignancy but so far no conclusive evidence has been produced to show that the enlargement is due to metastatic deposits. The author suggests that it is caused by the absorption of blood and the disintegration products of the tumor by the lymphatics.

JOHN MICHOU, M.D.

Jeau, G. Brachydactylia Due to Congenital Shortening of the Metacarpals (Brachydactylia par raccourcissement congenital des metacarpiens). *Rev. d'orthop.* 9, 3, 1930, 235.

Congenital shortening of the metacarpals is rare malformation. The first cases are reported by Sandifort in 1778. Jeau reports the case of man 30 years of age who had shortening of the right hand, and whose father and brother showed

similar malformation. The patient's third finger was much shorter than the others, but was not atrophied. The X-ray revealed absence of the distal part of the fifth metacarpal and fusion of the rest of it with the fourth metacarpal. The fourth metacarpal was of normal length but its diaphysis was thinned and curved slightly inward and its head much smaller than that of the second and third metacarpals. There were no malformations of the carpal or the forearm and no other anomalies.

Brachydactylia is usually observed in the first and fifth metacarpals. Generally the shortening is at the expense of the distal part of the bone. Synostoses and syndactylia are common both are shown by the X-ray.

The pathogenesis of shortening of the metacarpal must be sought in the mode of ossification of these bones. Ossification of the metacarpals does not occur until the eighteenth month of life, and malformation may result if the circulation is deficient. The finger has its own independent vasculature. The fact that such malformations are more common in the first and fifth fingers may be explained by the evolution of these bones. Probably also certain physiologic factors such as anatomic compression and embryonic infection are responsible.

W. A. BARNES

Henderson, M. B. Chronic Non-Inflammatory Lesions of the Knee Joint. *Arch. Surg.* 93, 18.

For the convenience of the surgeon, the knee joint may be divided into an antero-superior compartment (the suprapatellar pouch), an antero-inferior compartment, and a posterior compartment, each of which may be subdivided into internal and external sections.

Sprains. Sprains of the knee joint are not uncommon. The internal lateral ligament is most often involved. The differentiation between damage of the internal semilunar cartilage and sprain of this ligament is not always easy but in cases of sprain locking does not occur and there is usually a full range of passive motion. Rest in the position of extension followed by baking and massage usually gives relief. If pain and tenderness persist, raising the inner side of the sole and heel often relieves by removing the strain from the internal ligament.

Ruptures of the crucial ligaments. This condition is rare. If the anterior crucial ligament is torn, hyperextension of the knee is permitted and the femur slides backward on the tibia or the tibia slides forward on the femur. When the posterior crucial ligament is torn, the femur may be pushed forward on the tibia or the tibia pushed backward on the femur. Treatment by the application of plaster of Paris cast with the leg slightly flexed often results in excellent function.

Tibia articular fractures. Severe direct trauma may cause these fractures. Little can be done in such cases without arthrodesis, which most patients will not permit. Prolonged fixation in a cast or splint is apt to leave stiff joint. Early motion is essential,

and may be carried out under extension with a modified Thomas splint.

Recurrent dislocations of the patella. The patella always becomes dislocated out and May's satisfactory operations have been devised. The author retracts the inner capsule and overlaps it broadly after lengthening the outer capsule. The condition is more common in women than in men, and there is a familial tendency.

Old ununited fractures of the patella. Treatment is difficult. The object is to obtain approximation of the fragments without tension, and then bony union. The author makes a long, straight incision in the middle line, exposes the fragments, and freshens the ends of the fragments until good bone is reached. Beef bone screws have proved satisfactory to hold the fragments in coaptation. In the after-care, slight passive motion is begun in about four weeks, and soon thereafter slight active motion is encouraged.

Inter-articular mechanical derangement of the knee joint. The semilunar cartilages are the most common cause of mechanical derangement. The chief offender is the internal semilunar cartilage. The most common tear of this cartilage seen in the Mayo Clinic is the so-called bucket-handle type. Because of its loose attachment, the external semilunar cartilage is less often caught. When it is caught, however, it is more apt to be detached at its periphery and crumpled rather than torn.

A primary locking of the knee should not be operated on, but should be reduced by applying pressure over the anterior aspect of the internal semilunar cartilage and rapidly extending the knee. When lockings are frequent, surgery is necessary. The antero-medial incision is the incision of choice for the removal of the internal meniscus.

Another cause of mechanical derangement is the presence of osteocartilaginous loose bodies which cause locking by becoming caught between the joint surfaces. Their formation is due to osteochondritis dissecans, hypertrophic arthritis, or osteochondromatosis. In osteochondritis dissecans there are rarely more than one or two bodies, which arise from the internal condyle of the femur. In hypertrophic arthritis loose bodies may be formed by the breaking off of osteophytic growths. In osteochondromatosis, osteocartilaginous bodies are formed from the synovial membrane and may be very numerous. Removal of such foreign bodies is indicated. The split patella incision is the incision of choice for the removal of bodies found in the anterior compartment. Multiple posterior lateral incisions are those most useful when the bodies are in the posterior compartment.

Martin, W. Sciatic Neuritis and Its Relation to Flat Foot. *Am Med* 9 xxviii 69.

Inflammation of the sciatic nerve may involve the peripheral tissues or the nerve trunk. Neuritis of the trunk is not so common as the less severe type. Perineuritis is of shorter duration and more amenable to treatment than neuritis of the nerve trunk. An inflammatory exudate thrown out is deposited

in the sheath itself but soon involves other tissues. Organization of this exudate results in pressure which in turn interferes with the nutrition of the nerve cells. Loss of motion or sensation or both and loss of muscular strength or atrophy may result.

Limitation of motion is the first severe effect of the adhesions caused by the exudate. In the later atrophic form of neuritis, pain is severe and cell nutrition soon disturbed.

At the lower third of the thigh the sciatic nerve divides into the external and internal popliteals which are continued through the tibia to the foot. Inflammatory conditions involving the tendons of the tendon of Achilles will influence the relative position of the astragalus to the other bones of the foot, causing marked rotation or other malalignment of the heel due to tension or laceration of the tendons. It will also cut off the nutrition of the nerves. The author cites a case of flat foot resulting from sciatic neuritis secondary to tooth infection.

In such a case the source of the infection must be eliminated before the flat foot can be treated successfully. For good results the treatment must include both orthopedic and electrotherapeutic measures.

The author uses the tactic to express exudate from the tissues. This has also a sedative effect upon the inflamed nerve and toning action on the nerve cells. Relief from exudate pressure lessens the danger of atrophy.

When the nerve becomes less sensitive, the slow sinusoidal current is employed to restore the tone of the muscles and ligaments. JOHN ALCOCK, M.D.

Modest, B. W. Isolated Disease of the Scapoid. *J Am Med Ass* 9 3 lxxx 87.

Forty-three cases of isolated disease of the scapoid have been reported since the first case described by Koehler in 1908. The disease has been mistaken for tuberculosis, but tuberculosis has not been demonstrated and the course and final outcome are not the same. The pathology is unknown.

Etiological factors suggested are osteomyelitis, tuberculosis, syphilis, vascular change, trauma and endocrine disturbance. As a rule the Wassermann reaction is negative, but in one case reported the teeth were notched and the child's mother had a + reaction. Trauma may injure the ossification center or tear off the nutrient vessels.

The clinical symptoms are a slight limp and discomfort or mild pain in the scapoid region. The scapoid is enlarged and tender but abscess never forms.

The treatment is immobilization for three to ten weeks. The prognosis is excellent.

CASE. The patient was a child 7 years of age. Limping began ten weeks before he was examined by the author. There was no history of trauma. The family and personal histories were negative. Pain occurred only at night. A prominence over the scapoid and tenderness on pressure were noted. The feet were markedly pronated. Immobilization for about six weeks caused disappearance of the

tenderness in the scaphoid. There was no recurrence up to 10 weeks later.

CASE 2. The patient was a child 6 years of age who limped and complained of slight pain. The foot had been run over by truck about three months previously. This accident had caused disability for only four days. When the patient was examined by the author the foot was abducted and pronated and the scaphoid prominent and tender. The roentgenogram made just after the accident was negative, but when the patient came for treatment for the limp and pain the X-ray showed typical isolated disease of the scaphoid. A cure was effected by immobilization in cast for about six weeks.

CASE 3. A child 7 years of age suffered an injury to his foot in July which disabled him for four days. A roentgenogram made in December showed Koechler's disease of the scaphoid. A cure was obtained after immobilization in cast for a month.

CASE 4. This case as that of a child 7 years of age who had had swelling and lump in the right foot for two months. The foot had not been injured. Tenderness was present in the tarsus. A fluctuating mass appeared on the dorsum, broke, and discharged for several months. Necrotic bone was curetted from the cuneiforms and scaphoid and from the left elbow. The condition improved under anesthetic treatment.

In the author's opinion the disease is caused by injury causing hypertrophy of the scaphoid which, being cartilaginous up to the fourth year of age, becomes compressed, the soft, newly formed osseous portion spreading out laterally.

WILLIAM A. CLARR, M.D.

FRACTURES AND DISLOCATIONS

Young, A. A Five-Year Survey of the Routine Treatment of Fractures by Operative Methods. *Brd M J* 922 n, 209.

During the period of five years from May 1, 1917 to May 31, 1922 Young treated 693 cases of fracture. General anesthesia as indicated in 459 cases. Open operations are performed in 27 cases (39.25 per cent) and direct fixation was employed in 103 cases (37.86 per cent). Wiring was done in twenty-one cases, pinning or nailing in twenty-eight cases, plating in forty-eight, and fixation by screws in 1. A pin and plate were used together in 14 cases and a ring plate was employed in one.

The fractures included fractures of the lower jaw, clavicle, humerus, olecranon, radius, ulna, metacarpal phalanges, femur, patella, tibia, and metatarsus.

The use of wire in the fixation of fractures has fallen somewhat into disfavor chiefly because for long time silver wire was employed which was not strong enough to hold the fragments in the fixed position and snapped about the twist point. The author uses thin brass wire which is stronger than silver wire of the same thickness and resists the

action of the tissues for as long as necessary. The wire is sterilized in the usual manner and just before it is introduced is passed through the flame of an alcohol lamp to make it more pliable.

In fractures of the radioulnar joint it is possible to accomplish all that is desired through the opened joint. The fragments are adjusted, the spring pin is introduced, and the wound completely closed without drainage. The limb is then put up in a fixed position in a light plaster cast for two or three weeks.

In fractures of the acromioclavicular joint the fracture area is exposed, the small fragments are fixed temporarily, and a long resection pin is passed through the fragment and into the shaft of the bone through an external puncture wound. The wound is then closed and the arm fixed across the chest in light plaster cast which is worn for two or three weeks.

In none of the cases of fixation by open operation was there any complication due to sepsis.

J. C. WOODBRIDGE, M.D.

Edington, G. H. The Temporary Plating of Fractures of the Long Bones. *Brd M J* 922, n, 144.

Fractures which most commonly require plating are those of the tibia, femur and humerus and less frequently those of the fibula, radius, ulna, and clavicle. In simple fractures it is advisable to operate as soon as possible after the X-ray examination is taken so the skin will be free from ulceration and the fragments can be adjusted more easily. A Murphy lever may be necessary to reduce the fracture. The ends may be held in position by a Lane forceps or Lowman clamp. In compound fractures plating should be delayed for a few days in order that sepsis may be assured.

The skin is prepared by an aqueous solution of phenol and the fracture exposed by straight or curved incision. The straight incision is used when the bone has good covering of muscle, while the curved incision is more suitable when plate is used. The periosteum is incised and stripped off the area of bone to which the plate is to be applied. A Lane plate with three or four holes and screws can be used. Spiders should be employed for immobilization but care must be taken to place the limb in such a position that function can be restored after the fracture has healed. The plate is removed in three or four weeks, when it has fulfilled its function as an internal splint. As a rule, loosening of the screws indicates that union is taking place. Splints are discarded after six weeks. A plaster cast is applied to the lower limb for four to six weeks. Consumption also may be employed in the treatment of non-union of fractures.

The author draws the following conclusions:

Open treatment should not be routine.

Temporary plating is a reliable form of internal splinting in cases of fracture of the tibia, femur and humerus.

3. The skin incision should not come into contact with the fracture.
4. The periosteum should be stripped where the plate is applied.
5. A flat plate with Lane screws gives satisfactory results.
6. External splints are necessary for support.
7. Plates and screws should be removed 1 from three to four weeks.
8. Looseness of the screws indicates repair of the fracture.
9. Plating does not prevent delayed union or no union.

S. C. WOODBRIDGE, M.D.

Campbell, W. C. The Treatment of Ununited Fractures. *Am J Surg* 935, xxxvii.

Campbell reviewed the records of 55 cases of fracture treated in his clinic during a period of five years. Sixty-three of these cases were treated by open reduction. This method is employed only when absolutely necessary. It was not used in any of the cases of fracture of the femur.

Campbell concludes that the increase in the number of ununited fractures in recent years is due to a difference in the type of the fractures, improper interpretation of the X-ray plates, too frequent attempts to reduce, and too frequent resort to open operation. However, when there is no sign of the formation of bony callus at the end of six months the fracture should be considered ununited and radical measures should be instituted. The author uses the following technique when open reduction is indicated:

A routine dissection is made to the point of fracture, and the fragments are pared so as to allow perfect coaptation. Great care is taken to preserve as much periosteum on the bone as possible. The attachment of muscle and soft tissues to the periosteum is not severed along the line of the incision. A broad area is exposed for several inches on each fragment, depending upon the size of the bone involved and the location of the fracture. With a sharp chisel, a flat surface is made on both fragments. Scar and osteoid tissue are reamed out of the medulla to healthy marrow usually from $\frac{1}{4}$ to $\frac{1}{2}$ in of each fragment. A broad flat graft including periosteum, cortex, and endosteum is taken from the tibia. The width and length of this graft depend on the part involved. With a motor saw the graft is split longitudinally through the edge or small diameter into two parts. A strong outer plate consisting of dense bone of the cortex and an inner plate consisting of thin portion of the cortex with attached endosteum. The endosteum is removed from the inner half of the graft and a strip placed within the medulla to bridge the fracture as it is reduced. The heavy cortical portion of the graft is held firmly to the bone across the point of fracture. Three or four holes are then drilled through the graft and bone and nails made from the cortical portion of the inner graft are used. A second graft of small size can be easily secured. Small particles of endosteum are

packed about the point of fracture and the tissues are closed tightly in layers.

In some of the cases Campbell cut a slot about $\frac{1}{2}$ in wide in both fragments, inserted a mass of graft edgewise into this slot, and then brought both fragments together. A tenuous bone nail were placed through the bone and graft. There is some encroachment of the graft on the endosteum but this is not sufficient to prevent satisfactory results. The fragments are tabularized so that no motion can be detected when the operation is completed but external fixation is always applied.

In order to complete the operation in a reasonable length of time a team of five is necessary: two to prepare the grafts and nails and three to carry out the technique. To prevent delay in union, reduction of the fracture must be accomplished with minimal trauma to the parts and the attempt in open reduction of fractures care must be taken not to destroy the natural osteogenic elements.

S. C. WOODBRIDGE, M.D.

Duff, D. The Treatment of Ununited Fractures by Bridge Grafts. *Brit M J* 9, ii, 5.

Open operations to bridge gaps in bones must be performed with the most scrupulous care as regards asepsis. Ligatures should be handled and tied with forceps, and suturing of the soft parts should be done only with a needle-holder and forceps. At the end of the operation the surgeon's gloves should be free from blood stains as they should not have come into contact with any part of the wound.

Duff has tried out various methods of treating ununited fractures, such as the wedge intramedullary inlay, the combined inlay and intramedullary graft, and comminution of the bone ends. Each of these methods can be used in certain cases, but the most successful results have been obtained with the inlay method or the combined inlay and medullary method. The graft must be long enough to overlap at either end by wide margins. A graft denuded of periosteum will unite and grow but it is much safer to use a graft with periosteum.

A wedge-shaped graft is unsatisfactory because it is impossible to obtain sufficient contact between it and the host bone without splinting the host bone for considerable distance. The inlay graft satisfies the requirements. The intramedullary graft is easy to insert into one end but difficult to insert at the other end. The thrust graft modification of the inlay should be employed only if there is no danger of flare up of sepsis. The combined inlay and intramedullary graft is the best, especially when the bone treated requires thick graft.

Duff uses phospho-bronze wire in suturing. In flail shoulders he applies a double graft between the glenoid and humerus. In gap fractures of the tibia, the sliding inlay and ordinary inlay grafts give good results. In some cases a portion of the fibula may be cut off and placed in the gap of the tibia.

The after-treatment in these cases is important. The limb should be placed in a plaster cast in a

X-ray examination showed that the acetabular fragments had also become so perfectly replaced that all signs of the fracture had disappeared. This second case followed the classical course *vis reduction* of the fracture following reduction of the luxation.

W. A. BARNES

Bradburn M. Fracture of the Femur. *Surg Clin N Am* 9 12, 1914

Bradburn gives briefly the essential points in the modern treatment of fractures of the femur and includes in his article pictures of a case in which the result was excellent if not perfect. He advocates the use of skeletal traction by means of foetus, and states that he has never been unable to secure full length of the femur by this method. He uses the Thomas splint with the knee-flexion attachment and points out the advisability of moving the knee throughout treatment, this being easily accomplished with the apparatus described. The use of an ambulatory splint is desirable for at least three months after the patient is out of bed. Bradburn has found that skeletal traction is comfortable to the patient, and that the danger of infection about the caliper points is negligible. He reports 1 case of compound fracture in which he used Lane's plates combined with Carrel-Dakin treatment; the plates healed in position.

The complete article should be read by those interested in the successful treatment of fractures of the femur in order that it may be studied in conjunction with its excellent illustrations.

DR. W. C. HUR, M.D.

SURGERY OF THE BONES, JOINTS, MUSCLES, TENDONS, ETC.

Adams, W. R. Bone Grafting. *Surg Gynec & Obst.* 9 3, 1911, 97

Bone grafting is indicated to repair injured bone, stimulate osteogenesis, replace bone, and close foramina or trephine openings in the skull.

Bone transplantation as first done in 1809 by Merrem. Since that time there has been many studies of bone transplants but surgeons are not yet agreed as to the ultimate function of the graft.

Various grafts are used, viz the homoplastic, heteroplastic, and tenuous grafts, bled bone and hairy prep. The author regards the autogenous graft as the best.

In using the intramedullary graft Adams makes his incision 1 cm. to the side of the center of the bone. The graft is taken from the fracture. To obtain the exact width of the medullary canal, one end of the exposed fracture is tilted up. The turn saws are then set to this width. The graft is 4 or 5 in. long and does not extend closer than within 1 in. of the fracture. One end of it is pointed and the other blunt. The pointed end is inserted into the bed from which the graft was removed, and pushed into the medullary canal past the line of fracture and set the medullary

canal of the opposite end of the fractured bone so that it bridges the fracture.

Since the graft is the exact width of the canal it holds the fractured ends firmly and in good position.

JOHN WILCOX, M.D.

Whitman, A. Observations on the Correction of Deformities of Long Standing. *J Am M Ass* 1913, 100, 18

The author reports the case of a man 32 years of age whose legs became completely paralyzed following an attack of anterior poliomyelitis which occurred in his fourteenth year. On the right side there was a flexion contraction of the hip at an angle of 130 degrees and flexion contraction of the leg and thigh at an angle of 95 degrees. The foot dropped, but was not deformed. On the left side the flexion contraction was 100 degrees at the hip and 90 degrees at the knee. An astrictionomy was performed in December 1911. A Souther operation in January 1912 and another astrictionomy on the other foot in February of 1912. In March, 1913, a Souther operation done on the other side and followed by the application of plaster casts with correction made for ankylosis. On May 2, 1913, the patient was able to stand. On May 23, 1913, he took his first step and on June 9, 1913, he walked with crutches.

The conclusions drawn from this case are as follows:

1. Deformities of indefinite duration may be successfully corrected.

Some patients regard independent locomotion with the risk of repeated operation.

2. A single operation may be relied upon exclusively combined gradual mechanical and operative correction is necessary.

3. Functional use has direct influence on the deposit of calcium in bone.

W. C. ROBERTSON, M.D.

McWilliams, C. A. The Efficient Treatment of Acute and Chronic, Simple Traumatic Synovitis, Hemarthrosis and Hydrarthrosis by Repeated Aspiration and Immediate Active Mobilization Without Splinting. *Ann Surg* 92, 1911, 617

McWilliams does not approve of the classical method of treating synovitis of the knee joint by immobilization and its ordinary adjuncts. In its stead, he advises aspiration with a fine needle soon after the injury. When aseptic conditions are secured he has no fear of infecting the knee joint. He advises repetition of the aspiration as often as necessary to keep the joint free from fluid and reports every satisfactory case which was cured by the twenty-first day. The method described he regards as the best method of treatment provided there are no joint mice or dislocated cartilages.

The aspiration should be performed immediately before the ligaments become stretched. It results in a cure in half the time required by the old method.

To leave fluid in a knee joint is just as irrational as to leave fluid in the chest. Aspiration can be performed in the doctor's office and the patient allowed to walk home immediately afterward.

DENNIS W. CARR, M.D.

Hogg, C. Resection of the Distal End of the Ulna for Shortening of the Radius Following Fracture. *California State J. M.* 9:3 1932.

Any fracture of the radius which results in shortening of the bones causes certain characteristic changes. The ulna becomes relatively too long and blocks ulnar flexion. Pronation and supination are limited. The hand cannot pull or lift in a straight line with the forearm.

To overcome these difficulties the author resorted to resection of the distal end of the ulna. The only cases suitable for this procedure are those in which there is definite protrusion of the ulna into the wrist joint sufficient to limit ulnar flexion of the hand with or without subluxation of the ulnar head. These are cases of fracture in which the shaft of the radius has been shortened or the epiphysis has been impacted or comminuted.

By the author's technique linear incision is made over the lateral side of the ulnar head and the head divided at the level of the articular surface of the radius. The triangular cartilage between the radius and the ulna has always been found fractured. The ulnar styloid is seldom fractured. It is important to preserve the radio-ulnar ligaments, but they are usually found ruptured. As a rule neither splint or cast is necessary. Physiotherapy including active and passive motion, is begun as soon as the soft tissues are healed.

Removal of the ulnar head results in partial loss of the bony groove for the flexor carpi ulnaris tendon. If subperiosteal resection is done, the soft tissues maintain the position of the tendon satisfactorily. Every effort should be made to preserve the function of the internal lateral ligament of the wrist.

The author reports four cases and summarizes his article as follows:

1. The operative technique is considerably simplified.

2. Immobilization is rendered unnecessary.

3. Rotation of the forearm and lateral motion of the wrist are more completely restored.

4. There is no possibility of non-union and less opportunity of infection.

5. The restoration of strength and cosmetic results are better.

JOHN MITCHELL, M.D.

Leit, A. T. Transplantation of the Tensor Fasciae Femoris in Cases of Weakened Gluteus Medius. *J. Am. M. Ass.* 9:3 1932:242.

The author describes the operation he devised to relieve the limp caused by weakness of the gluteus medius muscle via transplantation of the tensor fasciae femoris muscle into the outer side of the femur.

He emphasizes the fact that the tensor fasciae femoris is not only an abductor of the thigh but a very important flexor. It also holds the center of gravity of the body over the supporting leg when the other leg is raised from the ground. The technique of the operation is as follows:

The incision is begun at the antero-superior spine and extended backward and downward over the great trochanter and then downward along the course of the femur for about 3 in. The skin with the subcutaneous fat is reflected forward, exposing the fascia lata.

Anteriorly running downward from the antero-superior spine, the fascia lata becomes thin before it extends over Scarpa's triangle. Along this line the fascia is incised downward from the anterior superior spine to 3 in. below the great trochanter where it is divided transversely backward for about $\frac{1}{2}$ in.

At about $\frac{1}{2}$ in. below the great trochanter the fibers of the tensor fasciae femoris become inserted into the fascia lata.

The outer surface of the femur is next exposed about $\frac{1}{2}$ in. below the trochanter by dividing the fibers of the vastus externus. A periosteal flap is

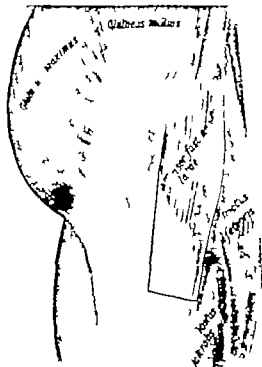


Fig. Normal anatomical appearance about the hip. The black line along the tensor fasciae femoris represents the incision made in freeing this muscle before transplantation.

position to prevent strain on the graft, and the next day window should be cut in the cast over the wound to relieve the pressure. As soon as the wound is healed this window may be filled with plaster. When the plaster is removed the limb should be supported by light braces and given light massage. When union is delayed without apparent cause further rest in a plaster cast and massage will sometimes result in firm union.

S. C. WOLFEVERER, M.D.

Van Hook, W.: *Fracture-Dislocations of the Humeral Head. Series I to 5*. J. O. Clin. Surg. 660.

Injured joint cavities in which there are bone surfaces not covered by periosteum or cartilage can be successfully treated by the subcutaneous implantation of fat tissue. When such tissue is subjected to recurrent pressure as in joint cavity it becomes thinner, tougher, and more resilient and loses much of its oil and lymph-space distention. Plicated flaps are better than free flaps, but the latter soon become vascularized and survive very well. Dead spaces must be avoided and the distance between the joint ends must be decreased as much as possible.

When a small fragment without muscle attachment is dislocated in the shoulder joint at the time of fracture, the difficulty of replacement is great. In most cases of this type the fragment should be excised and a flap of fatty connective tissue interposed.

Van Hook reports the case of a woman 52 years of age whose shoulder was injured four weeks before she came for treatment. The X ray showed that a saucer like piece of bone had been broken from the head of the humerus and lodged below the glenoid cavity. The joint was opened, the detached piece removed and a large pedunculated flap of fatty areolar tissue from the adjoining soft parts pushed into the joint cavity and fastened with catgut between the injured humeral head and the glenoid. The arm was then dressed in abduction. The wound healed by primary intention. Massage was given later. After several months, motion of the shoulder joint was almost normal.

FRA. G. MURPHY, M.D.

Chryssa, M.: *Congenital Bilateral Forward Luxation of the Head of the Radius*. (L. de la luxation congénitale bilatérale de la tête du radius chez une enfant). Rev. Chir. 9, vol. 340.

The case reported by the author was that of a soldier 30 years of age who when a child fell on his left hand and several years later fell on the right hand. Since these falls the elbows had been stiff and the arms semiflexed. Roentgenograms showed bilateral congenital forward luxation of head of the radius.

Bilateral luxations of this type are found in 14 of thirty five cases of congenital luxation of the head of the radius collected by Ross, Kirm-

son, and others. The condition is more common in males than in females.

The author's patient believed his malformations were due to his falls and could not be convinced that they were congenital. No other malformation was found in this case. W. A. BARNARD.

Russpp, H. B.: *Dislocation of the Semilunar Carpal Bone*. J. Am. M. Ass. 933, 1914, 99.

The entire surface of the semilunar carpal bone is articular except for slight roughness for the attachment of the dorsal carpal ligament. For this reason, and because of its uneven compression between the lower end of the radius and the os magnum, the semilunar bone is very completely dislocated in sudden forcible hyperextension of the wrist. In such hyperextension the sharp dorsal edge of the distal end of the radius shaves off the dorsal ligament of the semilunar and the semilunar is then crowded forward out of its resting place, its anterior pole being fixed by the anterior radiocarpal ligament.

Next to fracture of the scaphoid, dislocation of the semilunar bone is the most common injury of the wrist. The fingers are flexed and held rigid because of the pressure of the dislocated semilunar on the flexor tendons and the median nerve, and if the bone exerts marked pressure on the nerve, numbness and tingling result. Pain and swelling are localized anteriorly. An anteroposterior roentgenogram demonstrates the dislocated semilunar much closer to the plate than the other carpal bones, while the lateral view shows it more or less completely rotated forward. The hand appears shortened because the os magnum settles into the space left by the semilunar while the anteroposterior diameter is increased because of the anterior displacement of the semilunar bone. Occasionally the semilunar bone is palpable beneath the flexor tendons in the anterior wrist region.

Bloodless reduction preceded by the application of moist or dry heat for from three to twenty-four hours should always be attempted first in both early and late cases. Under general anesthetic pressure should be made on the dislocated bone with the thumb while the wrist is palmar flexed. Extension and counter extension in the line of flexion will facilitate reduction. Stern advocates the use of the Thomas wrench in bloodless reduction.

If attempts at bloodless reduction fail, open reduction is necessary. Davis' double curved shod will be found very useful. With the wrist palmar flexed and with traction on the hand and counter traction on the arm, this instrument is slipped over the lower pole of the semilunar bone to hook and pry its edge under the os magnum.

The author considers it better to reduce the dislocation rather than to excise the bone, but if the dislocation is associated with fracture of the scaphoid, excision of the semilunar with the proximal fragment or all of the scaphoid gives the best functional result. ROBERT S. REICH, M.D.

Bradford, E. H. The Treatment of Congenital Dislocation of the Hip. *J Bone & Joint Surg* 9:33, 1927.

The end results in nine cases ten to twenty-five years after reduction by the open and the closed methods, are reported. Function was satisfactory in all except two. Both of the latter were cases of bilateral dislocations in one reduction was effected by operation, and in the other by manipulation. Several cases seemed to indicate that the anatomical cure is less perfect and motion is more restricted after reduction by incision than after reduction by manipulation. It is probable, however that in the cases in which operation was necessary the deformity was greater than in the others.

Congenital dislocation of the hip may now be regarded as curable but forty years ago there was no thorough and satisfactory method of treatment. Abnormalities which must be overcome by the surgeon are shortened adduction and biceps muscles, contracted ligaments and capsule which act as a sling carrying the body weight from the neck of the femur, alteration in the shape of the acetabulum due to filling in by the adherent capsule and a flattened and twisted femoral neck. There are three steps in reduction: (1) the stretching or tearing of the resistant soft tissues, (2) the placing of the head opposite the acetabulum, (3) the reduction of the head into the socket through the contracted capsule.

Manipulative reduction can be made easier by mechanical apparatus. In a traction apparatus used in a large number of cases at the Children's Hospital, Boston, a strong rod extends from the perineum to below the foot. Counter-pressure comes on the up-rights against the perineum. A V-shaped piece from these up-rights extends over the antero-superior spaces and when clamped down holds the pelvis firmly. The leg is strongly abducted and stretched, and at the same time lever the fulcrum on the foundation plate of the apparatus is used to push the trochanter down and forward. Thus the head is forced through the stretched capsule and into the acetabulum.

The best position will necessarily be with the limb strongly abducted, as the reduced head is then pressed against the bone structure of the socket, while if the limb is adducted considerable part of the head lies against the weak cartilaginous rim. As soon as the retaining cartilaginous capsular ring has become sufficiently strong for weight bearing, the abducted position should be changed and the limb restored to its normal position parallel with the long axis of the body. If the period of cicatrization it is necessary that the great trochanter be kept in the plane of the cross section of the body rather than behind it, for in the latter position the torn ligaments connecting the ilium and the lesser trochanter become too short on healing and the restoration of the limb to its normal standing position will throw the head out of the socket into the so-called anterior position. Furthermore the trochanter in the frog position is behind the ischial band, and the retain-

ing function of the ischial band, pressing on the great trochanter is not utilized and does not force the head into the socket as it does if the trochanter is in its normal place.

The length of time immobilization and other steps in the after treatment should be continued cannot be stated definitely but must be left to the judgment of the surgeon in each case. If with active use the hip remains in place for a year the cure is probably permanent. In rare cases, however there may be a relapse after several years.

Reduction by open incision should be reserved for cases of relaxed or distorted capsule which cannot be reduced by manipulation. Incision means a deep wound followed by dense cicatrization which may interfere with the functional result.

Osteotomy to correct the twisted femur is unjustifiable because the muscles adjust themselves to the new relation and the joint function becomes normal in spite of the twist.

As open operative measures also have their place the surgeon should be skilled in several methods of reduction and be able to choose intelligently the best method for each case. In the cases of younger children it is sometimes easiest to place the patient face down with the affected leg hanging over the edge of the table. Strong pressure can then be made on the trochanter while the leg is manipulated.

If the deformity is corrected before the child begins to walk an absolute cure can be expected.

WILLIAM A. CLARK, M.D.

Chauvin, E. and Hayem, L. Two Cases of Limited Fracture of the Acetabular Rim in Luxation of the Hip (*Deux cas de fracture limitée du sésérol cotyloïdien au cours d'une luxation de la hanche*). *Rev. Chir.* 9, XXX, 543.

Fractures of the rim of the acetabulum are rightly considered a complication of traumatic fractures of the hip. In 1850 Senn collected twenty-seven cases and showed how the fracture can be produced experimentally in the cadaver. Since then the authors have found only eleven other cases.

In this article two new cases are reported. The first was that of a man 43 years of age who was injured in an automobile accident. Physical and X-ray examination showed a coracofemoral luxation of the iliac type. The roentgenogram revealed also fracture of the rim of the acetabulum. The detached fragment belonged to the antero-inferior border of the rim and was displaced outward in the space between the neck of the femur and the ilium. Reduction of the luxation as easily effected. Operation to correct the displaced acetabular fragment was believed unnecessary as there was no functional trouble.

The second case was that of a man 56 years of age who was injured in a fall. Examination revealed back and luxation of the hip. The X-ray showed also a fracture of the acetabular rim in the postero-superior portion. Reduction as easily effected, the femoral head resuming its correct position. A later

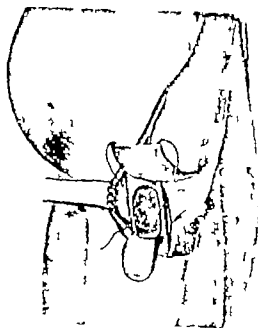


Fig. Groove in femur and freed tensor fasciae latae with silk suture before insertion into the femur

turned downward at this point, and groove going into the marrow is made about 15 cm long and 1/4 in wide.

The free end of the fascia lata is then sutured with No. 181 sutured silk and inserted into the groove by carrying the silk ends through holes drilled in the femur on each side of the groove. The knot is tied over the fascia in the groove and the periosteal flap is turned back and sutured over the groove containing the fascia.

Before the suturing with silk is completed, the thigh is abducted about 30 degrees, when the fascia is seen to have moderate tension. The skin and subcutaneous fat flap is then turned back and sutured by layers to their original situation.

A plaster spica is applied from the waist to the ankle, with the leg in 30 degrees of abduction.

The postoperative treatment consists of simple superficial massage after two weeks and muscle training after four weeks. The patient is allowed to go about with the spica and crutches at the end of four weeks.

At the end of 12 months the spica is removed and an abduction walking splint applied, which the patient wears for six months.

The author has performed this operation about fifteen times with very satisfactory results in most cases. The Trendelenburg sign has disappeared and the lateral swaying of the body has decreased if it has not disappeared. The author states that when the lump is due to weakness of both the gluteus

maximus and the gluteus medius muscles, and the lump is due to weakness of the lateral gluteus muscles, transplantation of the tensor fasciae latae is not satisfactory. FRANK LYNN MD

Meibum, T. S. The End-Result in Four Cases of Severe Destructive Injury to the Hip. *J Am Joint Surg* 9 3 xii, 70

CASE 1. In this case the upper end of the femur and acetabulum body were shattered and shelled October 6, 1918. Healing had occurred by Jan. 20, 1921 after many operations. The patient was able to walk with cane. There is good stability but 9 cm of shortening. There is no pain. Flexion is 40 degrees, extension to 30 degrees, adduction is about 165 degrees, and abduction to 165 degrees possible.

CASE 2. This was a case of infected compound comminuted fracture of the right hip due to shell wound. After 1 year of draining and several operations the patient wore a long caliper splint for four months and then walked with a cane. The final result is normal passive motion except for loss of abduction, active flexion to 120 degrees, shortening of 6 cm, dislocated head and subluxation of the knee. The patient is able to walk several miles a day without ill effects.

CASE 3. In this case a shell wound of the upper femur and acetabulum required two years and six months to heal. The patient now has excellent range of motion, good stability and no pain. He walks with a cane. Shortening amounts to 7.5 cm.

CASE 4. This is a case of loss of the upper end of the left femur, ankylosis of the left knee, and equinovarus deformity of the foot. When the hip healed there was practically normal passive motion, active flexion to 50 degrees, and abduction to 30 degrees. Shortening equalled 1 cm.

These cases demonstrate that a fairly satisfactory result can be obtained in cases of considerable loss of substance and prolonged infection of the hip joint, and suggest that extensive resection of the upper end of the femur in adults is justified for severely infected fractures and perhaps for tuberculosis of septic arthritis. WILLIAM A. CLARK, M.D.

Gatton, F. J. Knee Lesions and Operations Based on 100 Personal Cases. *Surg Clin N A* 9 2.

Synovitis synovitis. This condition may result from a blow or laceration of the knee with true or partial tearing of the internal lateral ligament. The author has never seen total tears of the internal lateral ligament alone. Immobilization of the affected knee by plaster of Paris or splints results in an early selective degeneration and trophy of the rectus portion of the quadriceps muscle and consequent laxity of the joint in addition to synovitis. The treatment suggested is careful massage of the joint and muscle to cause the disappearance of the fluid and maintain the tone of the muscle.

Synovitis with demonstrable lesions The case cited by the author showed crumpling in of the bone over a very small area of the adductor tubercle. The treatment consisted in immobilizing by splinting and strapping, and massage. After the twelfth day the effusion had almost entirely disappeared and the condition of the knee was very much improved. The patient is now able to walk with crutches.

Chronic or subchronic synovitis This is usually due to neglected synovitis in which too long immobilization and lack of massage and muscle exercise have produced a loose joint. The treatment consists of massage, active exercise of the quadriceps, the use of a Thomas heel, and strapping. The prognosis is usually good, but cure may not be effected until after several months. For cases which do not respond to this form of treatment, the author suggests a tomos draining into the intermuscular spaces of the thigh.

Chronic toxic synovitis This condition, which is very rare, is a chronic symmetrical synovitis due to adolescent hereditary syphilis. A case reported showed marked effusion, slight capsula thickening, and limitation of motion due to fluid. There was no local heat, tenderness, or pain. The X-ray examination was negative. Very marked improvement followed arsenphenamin treatment.

Arthritis with fusion Cases of arthritis with effusion are often mistaken for cases of synovitis. They may be of the active infectious or mild, recurrent chronic type. Very careful massage, heat, and motion are usually beneficial. In the more severe cases traction with Thomas splint or caliper should be continued for months.

Mild dry arthritis In this condition there is usually no effusion in the knee. Strain is due to overweight with or without knock knee or arthritis, but usually with pronation of the feet. Relief is given by the Thomas heel, adhesive strapping, and supporting bandage on the knee. Reduction of about 20 lbs. in weight ensures permanence of the cure.

Adhesions within the joint These are usually due to a fracture into or adjacent to the knee joint, or are the result of arthritis. In some cases the breaking up of adhesions by manipulation under anesthesia followed by massage is sufficient, but in more severe cases open operation to free an adherent patella is necessary. Occasionally arthroplasty is indicated.

Adhesions outside of the knee joint Such adhesions are usually due to fractures of the femur. Brackets and force have not been satisfactory. The best treatment is early active assisted motion and massage.

Simple cartilage dislocation A sign of simple cartilage dislocation is locking of the knee joint 20 degrees short of full extension, with severe pain when extension beyond this point is attempted. Another sign is palpable cartilage on the outside of the knee level of the joint or a point of definite tenderness

just in front of the midjoint line on the inner side. Cases in which locking has occurred only once should be treated conservatively. The cartilages should be removed only when they become dislocated frequently.

Fringe picking This condition may be confused with locking due to dislocated cartilage. Operation is indicated in both conditions only if the cartilage is doubtful. The fringe of the ligamentum alaris should be inspected and removed also if necessary.

Cartilages with secondary joint changes The patient whose case is cited gave a history of injury to the knee joint and could bear no weight on the knee without a caliper splint. Flexion to 5 degrees as possible without pain, total flexion was 50 degrees. The joint was tender on palpation and showed abnormal lateral mobility. Large fat pads and both semilunar cartilages were removed. In some cases splint is worn to maintain the stability of the joint. The operation is generally beneficial.

Full arthralgia In this condition there is a general thickening of the postpatellar pads with overgrowth of the subsynovial fat tissues. The condition may be due to hypertrophic arthritis, synovial tuberculosis, osteochondritis, or repeated trauma. Loose cartilages are removed together with villous hypertrophic growths including masses of the ligamentum alaris. The operation results in considerable improvement.

Osteochondritis dissecans This condition is usually the result of a dissecting process in the cartilage of the femoral notch which gives rise to free bodies in the knee joint causing arthritic changes. Operative removal gives good results.

Free bodies or joint mice The author ascribes joint mice to the loosening and growth of fragments of chipped bone within the joint due to broken osteophytes or osteochondritis. There is a history of locking and synovitis. Operative removal usually results in cure.

Contractures Joint contractures are usually due to contracture of muscle or scar tissue outside the joint, the result of fracture or trauma near the joint, arthritis, etc. In some cases the treatment consists in tenotomy of the involved tendons, correction by means of gradual extension with Thomas splint, physiotherapy, etc.

Ruptured ligaments with and without dislocation If luxation is present it is easily reduced if no arteries are torn. Rarely all the ligaments are ripped loose. The most important structures are the posterior cruciate ligament and the internal lateral ligament. If there is greater involvement, operation is indicated, although most of the methods give only fair results. The author's best results are obtained by reconstructing the lateral ligaments from fascia lata at such a slant as to limit the luxation without interfering with normal motion.

Chronic patellar luxation The patella is luxated outward by flexion either permanently or recurrently. The condition is said to be due to malformation of

the femoral condyles or to knock knee. In the author's operation a long lateral incision is made in and outside of the patella and another in the ligamentous capsule of the outer side of the patella. A similar but shorter incision is made on the inside. The patellar tendon is split in half and the distal end separated and passed under the intact half and sutured into the lower end of the inner cut of the capsule. The rest of this cut is overlapped $\frac{3}{4}$ in. and sutured. Good results were obtained in the case cited.

Patellar fracture. Fracture of the patella is usually caused by direct violence. The treatment consists in open operation, suturing through the solid tendon at the side of the patella and the lateral tears and torn tissues in front. T sutures are placed in front of the torn bursa to avoid skin adhesions. Motion is begun after immobilization by strapping for three weeks. The results are satisfactory.

Ruptured quadriceps tendons. This is more common in older persons and in males. It is mechanically equivalent to fracture of the patella. Operation consists of suturing the tendon with kangaroo tendon after freshening the surfaces. Mobilization for three weeks should be followed by massage and cure motion. After six weeks the patient can get up.

Rupture of the patellar ligament. This is a very rare condition which is equivalent to fracture of the patella. Suture is indicated. Coarseness is somewhat longer than in cases of fracture but the same functional results are obtained.

Abscess of the tibial tubercle. Usually the tip of the long epiphyseal tongue which runs down the patellar tubercle is torn away. The condition occurs usually in boys between 10 and 15 years of age. It is considered similar to Osgood Schlatter disease.

Non-tuberculous arthritis destructive erosive. There is usually roughening of the cartilage with the presence of synovial villi. Plastic excision resulting in ankylosis gives good function.

Tuberculous arthritis erosive. Radical incision for this condition usually results in ankylosis of the affected joint and healing of the process.

Joint in case of deformity excision. Excision is advised for cases of old fractures in which conservative treatment has been of no avail. A good functional result is obtained after ankylosis.

In certain new severe condylar fractures the author has obtained good function by remodeling the condyles to a smooth surface and removing spurs.

Old injuries. Plastic remodeling. Two cases are cited in which malunion of the condyles of the femur resulted in limitation of extension of the leg. The projecting portion of the femur was removed and the curv of the joint surface reconstructed sufficiently to permit complete extension.

Arthroplasty. The results of arthroplasty on the knee thus far have been poor. The results of Patti operation has been more satisfactory.

Osteotomy for deformity. Deformity of the knee joint such as knock knee is due to irregular epiphyseal growth following infection, fracture, etc. Subcutaneous osteotomy is performed at the point of maximum deformity immediately above the femoral condyles or below the tuberosities of the tibia. The deformity is corrected and the limb immobilized in cast for six or seven weeks.

Sepsis knee. This condition is due to infection following trauma. Operation consists of free excision and drainage.

Sepsis joints. The treatment consists in opening the joint and irrigating with corrosive salt solution 15000 for fifteen minutes, the joint then being closed. This is usually sufficient unless there is involvement of the adjacent structures.

Charcot joints. This condition usually occurs very early in locomotor ataxia. The author has seen improvement following intensive antisyphilitic treatment. The knee joint should be supported by a caliper splint.

REMARKS: S. RUCK, M.D.

Cook, A. G. Stern, W. G. and Ryerson, E. W. Report of the Commission Appointed by the American Orthopedic Association for the Study of Stabilizing Operations on the Foot. *J Bone & Joint Surg.* 1923, xxi, 35.

The Commission found that a foot ankylosed in moderate calcaneus results in heel walking with slight limp and gives a fairly serviceable foot. A moderate equinus is much better as with this condition the patient walks on both the heel and the sole, limping is absent or slight, and the raising of the heel lengthens a shortened leg.

The transverse horizontal section of Davis, the open arthrodesis of Hibbs and others, and the Whitman astraglectomy result in a now and simplified ankle joint the motions of which are controlled by bone balance independent of muscle action. The first two operations cause ankylosis of the tarsal bone and displacement of the foot back and on.

What is left of the astragalus, the foot being placed in moderate equinus. The Commission prefers (1) the astraglectomy of Whitman (2) the open operation of Hibbs and (3) the transverse horizontal section of Davis.

Persons with paralytic talipes calcaneus talipes calcaneocavus, and flail or dangle foot, club or tilt out toes or valgus are suitable subjects for astraglectomy and transverse horizontal section. These operations are not indicated when the calf muscles are active.

In cases in which there is rigid heel cord the astragalus and os calcis are in comparatively normal position and the entire drop is confined to the anterior portion of the foot. Large edge of bone is removed from the head of the astragalus and the posterior articulating surface of the scaphoid. Ankylosis results in stable foot which is little shortened but has good lateral and ankle motion.

The deformities remaining found in varus or valgus can be corrected by removing the superfluous

portions of bone when arthrodesis is effected in the various joints of the tarsus separately. In order to maintain muscle balance the necessary tenotomies and tendon transplantations can be done at the time the bone balance is corrected. Of the 250 feet examined by the Commission last year a great majority had been subjected to tenotomies and tendon transplantations, but all but a tabulating operation ultimately. This finding might suggest that tabulating operation should be done in the first place, but it must be borne in mind that only cases in which tendon transplantation failed were examined.

The Commission considered also the various methods of treating partial and total paralysis of the dorsiflexors of the foot.

1. Arthrodesis of the ankle joint by excision or by graft. This procedure usually fails to cause ankylosis if it is performed before the age of 4 years. The external malleolus should be fractured and displaced inward to bring the three bones into close approximation. Most patients were dissatisfied

with the result, chiefly because of the increased strain thrown upon the mediotalar joint and because they experienced difficulty in walking up and down hill and putting on and removing their shoes. The latter difficulty was easily remedied by the wearing of shoes laced down to the toes. Lexer's method of driving an autogenous or heterogenous peg up through the os calcis and astragalus into the tibia fails because the intra-articular portion of the peg usually becomes absorbed within a year.

Silk ligament suspension from the tarsus to the tibia. This method is not recommended for young children as the silk may cut through the bones of the tarsus and the unyielding cords cause severe distortion and disability with the growth of the foot and leg. Good results were obtained in some cases operated upon in early adult life, but in others either res or valgus occurred. In a few cases the silk caused suppuration for a long time after the opera-

tion. Therefore the use of silk ligament should be restricted to carefully selected cases of patients over 5 years of age.

3. Tenodesis by the method of Putti, Gallie, or Codrville. This procedure may be used on children under 5 years of age. In some cases good results have been obtained, but there is considerable doubt as to whether the weak, paralyzed tendons can hold up a drop foot throughout life. The Commission reserves its decision regarding the method until a greater number of its results have been studied.

4. Suspension of the foot by strips of fascia lata or the fascia of the leg. In the few cases studied by the Commission the results have not been sufficiently convincing to warrant recommendation of this procedure.

5. Excision of diamond shaped pieces of skin or skin bone flap in the dorsum of the ankle joint. Only temporary benefit results.

6. Astragalectomy. This operation has a distinctly beneficial effect in drop foot and especially in flat foot, the results being sufficiently good to warrant its use in selected cases. None of the operative methods considered can be confidently recommended as a standard procedure. Latent deformities of paralytic feet are far more disabling and more frequently require correction than simple drop-foot.

7. The use of drop foot braces, such as elastic straps fastened to the shoe spring-wire supports with a coil at the sides of the heel and the flat spring extending along the sole and up the back of the leg. These are all useful and comfortable.

The Commission urges that tendon transplantation be almost always supplemented by stabilization of a sufficient number of the smaller joints of the foot to prevent or correct all tendency to varus or valgus deformity, such deformities being of much greater importance than drop foot.

RUDOLPH S. KACH, M.D.

SURGERY OF THE SPINAL COLUMN AND CORD

Gruget. Lateral Subluxation of the Third Cervical Vertebra on the Fourth (Subluxation latérale de la troisième vertèbre cervicale sur la quatrième). *Arch. franç. hôp. d. élève* 9, 227, 939.

It is believed by many that incomplete luxation of the cervical vertebra is an anatomical impossibility. Gruget, however, has treated such a condition in a man 20 years of age. The result of fall.

The signs observed about a week later were: (1) inclination of the head to the left and slight right rotation resembling torticollis; (2) elevation of the left and depression of the right shoulder; (3) marked curvature of the spinal column, the convexity being on the left side in the region of the lower dorsal vertebrae.

Lateral displacement of the third vertebra on the fourth cervical was clearly indicated in an anteroposterior roentgenogram, the interarticular line

appearing oblique from above downward and from right to left. This was a case of the "incomplete luxation" described by Cyriax, and the minor displacement described by English writers.

Continuous extension for several days was followed by cervical extension and traction with the head of the bed raised. After the fourth day the patient was laid flat in bed and manual reduction was attempted. This was successful. The patient was then kept in extension for forty-eight hours. When he was examined three months later his condition was normal.

W. A. BRIDGES

Landwecker H. L. The Treatment of Painful Affections Involving the Cervical Vertebrae. *California State J. M.* 9, 2, 221, 3.

The author classifies cases of painful affections involving the cervical vertebrae into three groups:

The first group includes the most severe injuries and inflammations, such as fractures, dislocations, bone tuberculosis, and syphilis. Immobilization is the treatment indicated.

Group 2 includes the cases of arthritis. These, search for local infections, should be made.

Group 3 includes the baccic cases, in which the cause is unknown.

After the diagnosis has been made, adequate treatment should be given to restore maximum function. Rest is essential. Improvement of the tone of muscular and ligamentary tissue is hastened by local hyperemia. Movement should be attempted early. The treatment should be completed by training in carefully selected active exercises. Too often fixation alone is carried out, and no attempt at restoration of function is planned.

JOSE MITCHELL, M.D.

Vanderput, E. A Case of Luxation-Fracture of the Cervical Spine (A propos d'un cas de luxation fracturée du rachis cervical). *Arch. f. neurol. infes. de lair* 9 34

The author reports the case of a man who sustained a cervical luxation fracture in a diving accident and died four days later. The accident was followed by immediate quadriplegia. The paralysis of the arms was of the radical type. Sensation remained normal in the head and in the first four segments of the cord but was decreased in the fifth segment and lost below the sixth. Other sequelae of the injury were total abolition of the tendon, oculocephalic, and cutaneous reflexes, retention of urine and feces, and priapism. Meningeal puncture showed bloody fluid. The clinical picture was that of a quadriplegia due to an indirect injury to the cord in diving especially the sixth segment. The X-ray showed fracture of the fifth cervical vertebra. The rapid evolution of the clinical phenomena indicated that operation could be useless. At a autopsy the fifth vertebral body was found detached in front and luxated backward.

In cases of injury of the cervical cord such as this the probability that the patient will survive is so slight that surgery is not justified. In injuries of the dorsal and lumbar spine early operation may be advisable as there is some chance of obtaining a condition of medullary automatism. Whatever the site of the injury, a simple decompression may be done if the general condition permits it and infection can be prevented. W. A. BROWN

Girdlestone, G. R. The Place of Operations for Spinal Fixation in the Treatment of Pott's Disease. *Brit. J. Surg.* 9 3 37

Girdlestone reports fifty cases of operative spinal fixation in Pott's disease which combined with the fifty cases he had previously reported gives authority to his conclusions. He emphasizes the fact that the operative fixation of the spine is only part of the conservative treatment of Pott's disease, and suggests that many of the criticisms brought against

operative fixation are due to the fact that cases have been treated by operation without proper splintage without open methods, and without adequate rest or sufficient time.

He divides the angular kyphoses into two elements: (1) the telescoping and crowding together of the dorsal process, corresponding to the amount of destruction of the bodies, and (2) the telescoping or falling forward of the segment above until it regains support from the solid vertebra below. He points out that spinal fixation is always posterior and does not replace the bodies of the vertebrae which have been lost from the effects of the disease. The only function of external fixation is that of splinting the diseased area until rest and time can heal the disease in the bodies by disintegration.

Girdlestone discusses the different methods described and advocated by Calot, Hubbs, Albee, De Quervain, Ombredanne, Tobliac, Gaffie, and Robertson, Hey Groves, Hoesly and Calvé, mentioning in particular the fact that De Quervain and Hoesly found that after healing had occurred, grafts placed in the spaces of a dog's vertebrae from which one of the bodies had been excised supported a weight of 40 kgm. applied to the centers above the defect.

In twenty-five of one hundred cases Girdlestone used Albee's method of applying graft from the tibia to the split spaces or to the bared laminae. He prefers the former. In five cases he employed osteoplastic methods. He used mechanical or motor saw to cut the bones. Ten patients died within a week. Six died later: one from continued cancer and five from general tuberculosis or some other condition.

Ninety-four of the cases were clean cases but six of them presented such rigid sinuses. Girdlestone lays great stress upon the fact that internal fixation must not be depended upon for fixation until at least three or preferably six months after the operation. He credits his gratifying results to the use of what he calls "turning case," molded plaster cast of the anterior half of the body made for the particular patient before operation and applied whenever the patient is turned from his back. The operation is done with the patient lying prone in this turning case so that no stress is placed upon the graft until it has healed completely.

The author concludes that operations for spinal fixation are in no sense radical. External splintage of the spine must be maintained continuously before operation during the operation, and after.

and until firm stability of the affected section is assured by the restoration to stability of the bones and ligaments of the part, coupled with the stronghold of the graft or osteoplastic union. Girdlestone hands the operation has been free from danger in the cases of adults and has given good structural stability but in some of the cases of children the graft has been absorbed and in certain others death has occurred. Therefore he concludes that in adults posterior spinal fixation is reliable and has

great value but in children it is less reliable and at the same time less needed and therefore seldom if ever indicated.

DENNIS W. CHASE, M.D.

Cahill J and Galland, M. Osteosynthesa in Pott Disease (Ossification considérable sur l'ostéosynthese dans le mal de Pott) *J d chir* 9 xx 385

The authors discuss the indications and contra-indications for the treatment of Pott disease by the use of bone transplants.

Operative interference is never indicated in tuberculous disease of the spine in children because the classical treatment gives excellent anatomical and orthopedic results. Further, the operative treatment does not permit the patient to be up and about and the bone graft opposes a solid anatomical union of bone and the establishment of therapeutic corrective lordosis.

In adults, operation should be restricted to those cases in which the tuberculous process has been arrested. In short, for patients not of the laboring class the classical methods of treatment are best. For those of the poorer classes bone transplants may be used in order that the patient may more safely carry on his occupation without recurrence.

LOYAL E. DAVIS, M.D.

Wheeler W I C. Operation as Part of the Conservative Treatment of Pott's Caries. *Practitioner* 922, 1914, 34

From an operative experience of twenty-four cases the author concludes that the bone-graft operation to cause ankylosis in tuberculous spine is valuable as in the cases of adults but unnecessary if not contra-indicated, in children. In the cases of adults early operation is advisable unless the patient can give ten years to absolute rest and can obtain the best orthopedic care and training.

The kyphosis cannot be materially reduced by operation but an acute angle may be rounded by cutting off some of the prominent spinous processes. Correction by pressure may be tried but the use of much force is dangerous.

Abscess is not a contra-indication. In fact, one of the most surprising and gratifying features in the treatment of spinal caries is the rapid disappearance of abscesses after fixation of the diseased segment by bone graft. Paralysis also rapidly disappears in many cases after the operation, and is regarded as a strong indication for surgical treatment unless there is early response to conservative treatment.

Experience has shown that sepsis is not much to be feared. When it does occur the graft seems to live through it and ankylosis occurs just the same.

Bone grafting in the spine shows a higher percentage of successful results than similar operations on the long bones. This is probably because the site of the graft in the spine is well removed from the diseased portion. It is thought that the grafts are not absorbed and replaced. They become less dense

for a while but roentgenograms made about six months later show them to be more dense than before.

In the cases reviewed the Hibbs operation was done only once. In the others a modified Albee technique was used. Rib grafts were employed in two cases and tibial grafts in the others. Instead of splitting the spinous processes to make the bed for the graft, the sides of the processes were denuded of periosteum and the bone surface gouged with file. The graft was then laid against this raw surface and the soft tissues were sutured over it.

The after treatment consisted in support on frame in bed for three months, then limited freedom with a spinal brace and gradually increased activity. Most of the patients were able to go back to work at the end of a year.

WILLIAM A. CLARK, M.D.

W Halse J O. Crush Fractures of the Spine. *J Bone & Joint Surg* 9 B, 22, 8

This article is a detailed statistical study of eighty-two cases of crush fracture of the spine.

Fractures in which hyperflexion or hyperextension of the spine is the causative factor, as in a fall from height, diving accidents, or the falling of weight on the back, are located in regions where the fixed portion of the spine meets a movable portion. Sixty-four per cent of all fractures occur in the first and second lumbar vertebrae and 3 per cent in the other lumbar vertebrae.

The author found that in the absence of an evident paralysis the diagnosis of fracture was not often made previous to admission to the hospital. In the forty-seven cases in which the correct diagnosis was not made paralysis was present in only one, while of the twenty cases in which the diagnosis as correct 75 per cent showed paralysis.

The complaint of 85 per cent of the patients was pain at the level of the fracture. Pain is deep pressure over the knuckle in the spine is a fairly constant sign. Deformity is invariably present at this site unless the fifth lumbar is the vertebra involved, when increased lordosis is present. Limitation of motion is present in every case and in vast majority limitation of hyperextension is by far the most valuable sign of fracture.

In examining fractured spine, especially in late cases, a point at which the upper and lower fragments pivot will be found when the patient bends laterally. This is at the site of the fracture and will be a point around the knuckle in the spine.

In the treatment of the lower fragment, the vertebra below the fractured vertebra is fixed by fastening the lower extremities in a spring frame resting on the side bars of the hospital bed and superimposed over it lower two thirds. When the frame is adjusted so that it extends to the level of the fractured vertebra, supporting the entire lower fragment, it is raised by means of screw and the upper fragment is allowed to bend posteriorly to the bed.

When correction has been continued on this bed as long as necessary, new type of body cast is applied

This cast is applied on a horizontal frame with bar pressing forward and the deformity protected by thick pad of saddle's felt, while the upper fragment of the dorsal spine is held horizontal and the lower fragment is thrown forward as much as the angle of the deformity. The weight of the patient's body then tends to throw the lower fragment backward

into an oblique window which is cut on the dorsum of the cast with its upper edge at the apex of the deformity.

This cast is worn from six to twelve months, depending upon the patient's age and the duration of the deformity. Internal bone fixation is as necessary. D. VAN R. TALLON, M.D.

SURGERY OF THE NERVOUS SYSTEM

Abramson, H. I. Injuries of the Nerves of the Arm (*Über Beschädigung der Armaerven*). *Leib. f. Chir. u. Orth. 305*

The author differentiates between primary and secondary lesions of the nerves, the former due to fractures and other injuries and the latter to pressure from callus formations, neurinoma, etc. Twenty-five per cent of all nerve injuries in the arm are lesions of the radial nerve. The median and ulnar nerves are involved in only one and eight per cent respectively. Secondary lesions are more common in children than adults, especially in fractures of the distal humerus and near the elbow. The median and ulnar nerves are less exposed to injuries from fracture. Nerve lesions occur frequently also in dislocation of the humerus and elbow. Among the laboring classes the open primary lesions due to puncture injuries are the most common. Injuries in children a greater number of subcutaneous lesions are observed.

In the author's opinion every incisional wound should be examined under anesthesia if an injury of the nerve is suspected.

Three cases are reported.

SENNE (U)

Leriche, R. The Indications for Posterior Radicotomy Based on Twenty-Five Cases (*Les indications de la radicotomie postérieure à propos de vingt-cinq observations*). *Ann. Chir. u. 315, 647*

Seventeen of the twenty-five cases discussed in this article were first reported in 1914. In these seventeen cases there were four deaths. Three of the deaths Leriche believes could have been prevented by better technique. All of the other patients operated upon recovered with only very few and slight postoperative complications.

Intradrural radicotomy is one stage is not hazardous or difficult operation but it has much time. In Leriche's entire 60 cases it was performed for the following indications: crises of tabes seven, radiculitis, two pachymeningitis, one pain due to neoplastic compression, three painful stumps, one rebellious zona, one Parkinson disease, three sclerosis en plaques, one and spasmodic paralysis, five.

Four of the operations were cervical radicotomies, nine were dorsal, five were lumbar and seven along the terminal cone. Twenty-one of the operations were intradrural and four were extradural.

Leriche did not observe the definite disappearance of tabetic crises in any of his seven cases of tabes in

which radicotomy was done. Neither did he find the operation always beneficial in cases of radiculitis. Rebellious zona seems a good indication for posterior radicotomy. In cases of painful stump Leriche has had one good result and one failure. For this condition he believes radicotomy should be the last resort, chordotomy being preferable.

In cases of neuritis due to neoplastic compression radicotomy sometimes gives excellent results and at other times only temporary benefit. It is indicated when the tumor is clearly localized, but in cases of poorly localized tumors it is less efficacious.

In spasmodic paralysis, and especially in Little disease, section of the root should not be done if there is any cerebral taint or the spasmodic phenomena are evidenced particularly in the upper limbs. In the less severe cases great improvement can be obtained if the operation is performed at the age of 3 or 4 years.

The results of the operation are particularly interesting in the spasmodic paralysis following certain types of meningitis.

In conclusion Leriche states that there need be no fear as to the stability of the laminectomized spinal column. W. A. BROWN.

Jensen, J. Contributions to the Surgery of the Sympathetic Nervous System (*Beiträge zur Sympathicectomie*). *Spitalst. 91, 13*

In three cases of dry gangrene of the leg Jansen resected from 5 cm. to 20 cm. of the plexus per femoralis from Hunter canal upward to Scarpa triangle and even the plexus femoralis profundus. Because of the resultant paralysis amputation much more of the leg as is said that is usually possible. There was no recurrence.

In 11 cases of cystic crises in tabes Jansen extirpated the splanchnic nerves and the semilunar ganglion according to the method worked out by Gosselin. After laparotomy and division of the gastrohepatic ligament the liver (the hepatic lobule) and the lesser curvature were drawn upward and down to expose the inferior vena cava and on the left side under the peritoneum the great splanchnic nerve. The latter was then followed upward to the diaphragm and extirpated with Lobstein's ganglion by means of a pair of scissors. Laterally and behind the cava was found the lesser splanchnic nerve. This was treated in the same manner. Below these two nerves lay the right semilunar ganglion. This ganglion was extirpated

and the efferent fibers of the solar plexus and the pneumogastric nerve were divided.

In a case of glaucoma and trigeminal neuralgia Juarez performed a unilateral cervicothoracic sympathectomy by Jonnesco method with excellent results.

STOLAROFF (Z)

Kleinschmidt O. Sciatic Phlebalgia and Sciatica (Ueber Phlebalgia sciadica und Ischias) *Kl. Wochenschr.* 9 4, 790

According to Reinhardt sciatic phlebalgia may be caused by varices within or on the surface of the nerve and involving its entire course or only certain sections.

The clinical symptoms are gradually developing pain in the foot and calf fatigue and cramps, which disappear at night and when the leg is elevated. In

contrast to this, the pain of sciatica is severe appears suddenly first in the gluteal region, and is aggravated (Lasegue) rather than decreased when the leg is elevated. In addition, there are neuritic symptoms (sensory disturbances, trophic and pressure points). Similar symptoms may be produced by secondary changes in the blood vessels, to wit the sciatic nerve due to thrombosis, phlebitis and advancing sclerosis.

The author reports two cases of the latter type. In one, the sciatic nerve was enclosed in an indurated sheath penetrated by thrombosed vessels, while in the other there were varices around the tibial and peroneal nerves which became inflamed and caused severe neuritic symptoms in the region of these nerves. Both patients were cured by operation.

RIMM (Z)

MISCELLANEOUS

CLINICAL ENTITIES—GENERAL PHYSIOLOGICAL CONDITIONS

Kraus, W. A Case of Papillomatosis of an Abdominal Cavity (Ueber einen Fall von Papillomatosis intra-abdominalis) *Frankfurt Ztschr. f. Path.* 9 13111, 59

This article is a detailed histologic description of a papillary tumor the size of a fist, which developed during the course of twenty years in an abdominal cavity of the buttock in a 40-year-old woman and was removed at operation. Especially worthy of notice was the markedly typical development of epithelium upon the papillae, such as traced by the author to the ingrowth of the epithelium of the skin into the abscess cavity. The most important factor in the development of the papillae was the epithelium.

Healing took place by first intention without recurrence or the formation of metastases, according to later reports from the attending physician.

MEYER (Z)

Wassmer E. The Elective Fixation of Radium Colloidal Substances on Embryonic and Neoplastic Cells and Its Importance in the Diagnosis and Treatment of Cancer (La fixation élective des substances radiumcolloïdales sur les cellules embryonnaires et néoplasiques, son importance dans le diagnostic et le traitement du cancer) *Bull. Acad. de méd. Pa.* 9 1001111, 46

Wassmer the director of the Swiss Radium Institute at Geneva, reports a new method for the diagnosis and treatment of cancer which consists in the elective physicochemical fixation of radium-colloidal substances on embryonic cells in general and especially neoplastic cells.

Experiments carried out for some time showed that, when introduced into the circulation of pregnant guinea pigs the toxic properties of radium-colloidal substances become electively fixed on the

embryo. The fixation was demonstrated by curiographic picture of the embryo. The author credits this elective fixation in clinical cases of primary tumors and metastases by injecting radium colloidal substances both intracranially and directly into the tumors and then examining the curiographic images of the tumors.

A case reported was that of a woman with an endothelioma of the left parotid region with metastases in the preauricular glands. Intravenous injections followed by local injection into the glands enabled the author to obtain curiographic picture of the primary tumor and a second picture showing metastases at the base of the brain. Further injections were followed by decrease in the size of the tumor and total clinical disappearance of the metastases.

Wassmer states that the method of injecting radium colloidal substances is entirely new. Because of the affinity of the toxic and colloidal particles for embryonic and neoplastic cells it makes possible further study of the biological chemistry of young and neoplastic protoplasm. It is a curiographic method which permits early diagnosis of deep neoplasms and their metastases. Because of the physicochemical fixation of the radium colloidal particles on neoplasms and their metastases, it brings the curative agent into the very center of the neoplastic and embryonic cells.

For these reasons the author believes the method opens up a new and very fertile field in the treatment of cancer.

The patient whose case is reported ultimately died of cerebral hemorrhage. Wassmer is able to confirm the complete disappearance of the tumor in the parotid region and of the metastases in the neck, but believes it is possible that the treatment by six intracranial and three local injections of radium colloid may have favored the rupture of the cerebral artery which caused death.

W. A. BRUNN

Bullock, F. D., and Curtis, M. R. A Transplantable Metastasizing Chondro-Rhabdomyo-Sarcoma of the Rat. *J. Cancer Research* 9: 2, vii, 95

With the exception of certain mixed tumors of the testis, ovary and kidney neoplasms containing striated muscle are very uncommon in man, and only a few have been found in a rat. The rat tumor herein reported is apparently the first rhabdomyoma in a rodent to be recorded.

The growth was found in a black and white female rat between 15 and 10 months old, one of a group which had been experimentally infected with cysticercus fasciolus. When first observed the tumor was about the size of a pea. In the first few weeks it showed practically no increase in size, but at the end of 10 months, when the animal was mated it was slightly larger. The rat later gave birth to 11 young, only one of which she reared. During gestation the tumor grew rapidly.

One month after gestation a fragment of tumor was removed surgically and used for the subcutaneous inoculation of ninety-three rats. The rat survived the operation thirty days, during which period the tumor grew rapidly. Microscopically the growth showed a rather complex structure varying in different parts. It was composed partly of muscle cells and fibers and partly of small round or polyhedral cells suggesting embryonic cartilage cells. These two types of cells occurred separately in certain parts of the tumor but in general were freely intermixed on or the other predominating.

Scattered through the tumor were large and small islands of cartilage. The central parts of some of these islands consisted of differentiated cartilage cells, while the cells comprising other islands were solely embryonic in type. The cartilaginous islands showed a marked tendency to necrosis. Embedded in the tumor were several small trabeculae of osseous tissue. The tumor was rich in blood vessels consisting largely of dilated capillaries.

Transplantation of the tumor was successful and within the eighteenth generation. In its initial difficulty of propagation this tumor resembled carcinoma rather than a sarcoma. Of the grafts introduced subcutaneously into the ninety-three rats of the first generation only three produced tumors and only two tumors were obtained from the forty-eight rats of the second generation. In the third generation however the inoculation was successful in 80 per cent of the cases, and in the subsequent generations there was a tendency to high percentage of takes.

Unlike most other rat sarcomata this tumor on transplantation grew progressively in almost every animal in which a graft became established.

In conclusion the author describes this tumor briefly as a chondro-rhabdomyo sarcoma of the sternum, a transplantable metastasizing tumor in which cross striated muscle fibers have persisted through fifteen generations although the cartilaginous elements early lost their power of differentiation.

GAMOR E. BRILL, M.D.

BLOOD

Loehr W. and Loehr H. The Changes in the Physicochemical Structure of the Blood Plasma with Accelerated Sedimentation of the Blood Cells Following Treatment with Irritants, Surgical Operations, and Diseases (Ueber die Veränderung der physikalisch-chemischen Struktur der Blutsäule bei beschleunigter Blutkörperchenabsetzung aus Ödölen von Reizkörperchen, chirurgischen Operationen und Erkrankungen). *Zeitschrift für experimentelle Medizin* 9: 2, 207, 20

In this study the authors attempted to determine the physicochemical changes produced in the blood plasma by injections of proteins, infections, surgical diseases and septic operations. For this purpose they did not use the plasma flocculation reactions of Sachs and von Oettingen but employed the vacuum refraction and surface tension. In all of the experiments the determinations were made on plasma entirely free from hemoglobin to which hureidin or citrate had been added. The use of the Ostwald viscometer the influence of temperature was eliminated by means of a thermostat kept constantly at 20 degrees C. Hureidin was used only for the determination of fibrinogen and for particularly important cases. For other determinations 0.5 cm of 15 per cent solution of sodium citrate was added to 40 c cm of blood.

Following protein injections, aseptic operations, and diseases an increase in fibrinogen associated with increased acceleration of sedimentation of the blood cells was first noted. Running parallel with the acceleration of sedimentation there was a considerable increase in the relative viscosity of the plasma. The surface tension in the plasma was decreased. By means of the Nagels-Rohrer technique a considerable change in the relative proportions of albumin to globulin in favor of the latter was observed constantly in the presence of accelerated sedimentation. These changes are demonstrable also in the serum, but to considerably less extent.

Of the stimulations mentioned, septic operations proved to be the most effective with regard to the constancy of their effect and the strength of the reaction produced. Such regularity was not always observed after single injections of protein. The physicochemical changes became more marked the more extensive the surgical interference.

THOMAS (2)

BLOOD AND LYMPH VESSELS

Matas, R. Arteriovenous Fistula of the Femoral Vessels (Arteriovenous Varix) on Level 10th the Origin of the Profunda. *Surg. Clin. N. Am.* 9: 4, 65

The author reports the history of a healed shell wound in the right thigh over which a thrill was felt three months after the injury.

Palpation showed a decrease in the pulse of the dorsalis pedis and posterior tibial arteries as com-

pared with the left side. A slight pulsation which was visible $\frac{1}{4}$ in below Poupart's ligament extended upward and downward along the femoral vessels, the superficial veins above and below the scar were decidedly enlarged when the patient stood up. On palpation, an intense purring thrill was felt, which extended upward along the iliac vessels and downward to the internal condyle. Auscultation revealed at the level of the scar a typical loud systolic murmur which diminished in intensity upward and downward along the vessels from the scar. A loud venous roar was loudest over the scar and disappeared near the umbilicus above and the femoral condyles below. When the tip of the finger was pressed over the scar the pulsations and bruits ceased, showing that this was the site of the anastomosis.

With the exception of these local disturbances, the general physical examination was negative. When the old scar which had remained over the site of the arteriovenous fistula was compressed with sufficient force to stop the thrill and the pulsations, the patient became conscious of his heart beat and the femoral pulse above the aneurism became slower. If the pressure was continued for a long time he became faint and the blood pressure taken simultaneously with the pulse showed an increase. The instant the compression was discontinued the pulse rate rose to normal and the blood pressure fell to the original standard. This sign is designated as Brinkman's bradycardiac phenomenon.

The investigation of the efficiency of the collateral circulation was carried out first by compressing the femoral artery immediately above the anastomosis and then by compressing both vessels with a compressor applied directly over the fistula. If the limb was completely exsanguinated up to the level of the fistula by elastic compression with an Esmarch bandage and the bandage kept in place for ten minutes while the common femoral vessels were occluded by compression, it was demonstrated that the collateral circulation had developed sufficiently to maintain living circulation in the toes, foot, and leg in spite of the complete occlusion of the main vessels. This was demonstrated by watching the hyperemic area which followed the removal of an elastic bandage and constrictor applied from the toes to the level of the anastomosis. On removal of the bandage while the artery and vein were firmly compressed at the site of the anastomosis the hyperemic wave was seen to rush down the thigh and to the middle of the leg with characteristic redness, and then with less intensity over the lower leg and foot, lingering and spreading over these parts and gradually replacing the waxy pallor of the exsanguination.

The operation was performed as follows:

1. An elastic bandage and constrictor was applied from the toes to the upper third of the thigh.
2. A vertical incision 6 in. long was made in Poupart's ligament and down below the apex of Scarpa's triangle.

3. Poupart's ligament was exposed and the falci form process divided.

4. The common femoral artery and vein were isolated and the main artery and vein dissected to the level of the anastomosis, which was recognized as a hard, callous mass or bridge of scar firmly adherent to the vessels, binding and fusing them together in dense, composite mass. The profunda artery was actively feeding the fistula, the vein also was supplied by its profunda branch.

5. The profunda was then recognized at its origin from the common femoral, about $\frac{1}{4}$ in from the anastomosis and on the posterior side of the artery. The vein also accompanied it. It was too deep to isolate quickly and in order to control it a flexible Doyen clamp was applied to compress the profunda midway between its origin and the fistula, thus effecting prevention of the recurrent stream of the profunda from reaching the fistula.

6. The thick callous margin of the scar tissue which connected the two vessels was excised. The adventitia was very weak at this point. A few silk sutures were passed through the adventitia (not perforating the artery) to reinforce the weak spot. When the sutures were tightened the bulge completely disappeared. The fistulous opening in the vein was sutured with a fine milliner needle.

7. The falci form ligament was not sutured, giving additional cover to the artery and vein. The hyperemic reaction which had spread rapidly to the toes after the removal of the constrictor left behind it uniform pink normal, living color. The pedal pulses were felt just as before the operation. A few minutes after the separation of the vessels and the restoration of the circulation to its normal channel the radial pulse rose rapidly from 90 to 120, then to 140 and finally reached the maximum speed of 160. After ten minutes, it descended until it reached the level of 80 and later 100.

It is possible that the sudden displacement of large volume of blood into the limb, release of the constrictor may have contributed to the post-operative tachycardia through momentary fall in the blood pressure.

Because of the collateral circulation through the branches of the internal iliac, it is only by direct compression of the abdominal aorta, by the bifurcation or elastic circula compression around the waist when the subject is thin that a completely ischemic field can be obtained in the iliofemoral region.

A few fundamental guiding principles to be observed are:

The suppression of the communicating channel or fistula without sacrifice of the vessels involved.

1. Prophylactic hemostatic control.
2. Knowledge of the behavior of the peripheral circulation on suppression of the circulation in the main vessels at the site of the fistula whenever this is accessible to compression.

MORRIS H. KAPLAN, M.D.

Leriche R. The Technique of Peri Arterial Sympathectomy and Some New Indications (La technique et quelques indications nouvelles de la sympathectomie perivertebrale) *Presse Méd. Par.* 2, 21, 5

A number of investigators who have performed experimental periarterial sympathectomy upon animals have failed to observe the immediate decrease in the size of the vessel described by Leriche. Leriche answers these criticisms by stating that, with one exception, he too has never observed this phenomenon in any of the usual laboratory animals. One dog upon which he performed the operation showed immediate shrinkage of the artery, but this could never be repeated. Leriche believes therefore that the result of periarterial sympathectomy can be studied only in man.

When the operation is performed upon normal arteries it is without danger. When the vessels are thrombotic and especially in cases of senile gangrene great care must be exercised. In the beginning Leriche regarded it as necessary to perform the sympathectomy either distal to or proximal to the vessel surface, but he now leaves the extent of the operation.

Particular attention is called to the immediate local constriction of the vessel. The second is peripheral vasodilatation which follows constriction of the sympathetic plexus about the vessel. These two phenomena distinguish the periarterial sympathectomy from simple arterial denudation. Following the operation there is definite peripheral vasodilatation with increase in the arterial pressure and an elevation of temperature. In the author's opinion this operation is applicable in numerous conditions, dermatology in particular, and diseases of the glands of internal secretion, especially those associated with decrease of secretion.

LOU L. D. vs. M.I.

Mayo, W. J. The Significance of Lymphatic Involvement in Infections. *J. Am. Med. Ass.* 9, 3, 174

In the light of various experiments in the Chase (the author studied the relation of the lymphatics to the ultimate prognosis in tuberculous epiphitis) and cancer all introduced from without through the protective mechanism of the body and to which tuberculous and syphilis by identifiable foreign material get. It takes the most ever remember C. Kaberm original observation that the source of infection can be detected if the sentinel lymphatic gland first showing enlargement can be located.

Bearellia has confirmed the experimental work of Noctuel on anthrax. Noctuel demonstrated that rabbits and guinea pigs tolerate large numbers of anthrax bacilli injected directly into the blood or the peritoneal cavity without contaminating the cutaneous tissues, animals which could cause a fatal anthrax infection if injected into the skin tissues which are rich in lymphatics. This shows

that there is definite relation between the site of the infecting organisms and their toxic effect, and it shows an interesting field for research.

Many of the most able exponents of the treatment of tuberculous believe that if it is possible to remove the primary tuberculous focus, here the bacilli enter the protective mechanism of the body, become adapted and first involve the lymphatic system, the secondary processes. If thereby be rendered much more amenable to treatment. Those investigators evidently believe that, as Roseman has found it to be the case in the case of bacteria, the strain of tubercle bacilli becomes more or less specific to the individual. Surgical experience in the removal of localized tuberculous deposits gives some stability to this opinion.

The fact in relation to spirochetal involvement of the lymphatics are less easy to ascertain but evidence shows that in a high percentage of cases the lymphatics fail periodically to check the progress of the disease. There is much evidence suggesting that the glands may act as secondary foci in the distribution of spirochetes, like the defense reaction developed by their presence in the lymph nodes is to considerable extent protective against the action of remedial agents. We know that in the spleen, which is lymphoid origin, spirochetes are protected against remedial agents under certain conditions that in arrest in progressive phthisis and remarkable improvement in the subsequent anemia follows the removal of the spleen, and that in such cases spirochetes are to be found in the spleen.

Roseman's observations and experiments showing the specificity of organisms relation to their secondary effects upon lymphatic system. Fifteen strains of spirochetes have been found experimentally, each seemingly with individual characteristics which can be shown by the living animal as well as in the test tube.

From various investigations made to determine the ultimate result following operation for carcinoma particularly those of Sistrunk and Bloodgood it can be said that the curability of cancer following operation for growths which can be locally removed depends more on the glandular involvement than on any other one factor. It would be conservative to state that two-thirds of all cases of removable cancers in which there is no glandular involvement will remain cured and death due to subsequent local extension or blood transmission will result in only one-third.

One may even state that other things being equal the prospects of cure of cancer depend more upon the lymphatic richness of the part affected than upon any other one factor. In from 80 to 85 per cent of cases of cancer of the body of the uterus.

Such is poor in lymphatics hysterectomy results in five year cure but in cases of cancer of the cervix which has rich lymphatic supply it gives five year cure in only 5 per cent. Because of the sparseness of the lymphatics a five year cure follows.

operation in 50 per cent of the cases of cancer of the large intestine. Incurability of carcinoma of the colon is more often due to secondaries in the liver caused by emboli broken off from cancer infected venous thrombi than from carcinoma of the glands. In carcinoma of the stomach, which has a rich supply of lymphatics, a cure is obtained by radical operation in only 25 per cent of the cases.

The lymphatics are a system of absorbents. Twenty years ago Charles H. Mayo emphasized the fact that the lymphatics reach the height of their activity in adolescence and like the tonsils, the spleen, and other lymphoid structures show retrogression. This fact explains the relative curability decaying by decade of carcinoma in the aged as contrasted with the rapid growth of malignant disease in the young.

The toxic agents are commonly distributed three ways: through the blood, the distribution being exceedingly rapid through the lymphatics the distribution being slower and by local extension from pathologic lesion.

The arterial part of the capillary has greater pressure than the tissues, and the tissues have greater pressure than the venous part. The point should be emphasized that normally the blood capillaries pick up only molecular substances or extremely fine subdivisions, soluble in water below the colloid dimensions. With the exception of the gastrointestinal tract and liver (portal system) the blood capillaries are not normally pervious to colloidal substances, but these larger particles are taken up by the endothelial cells which act as phagocytes and by amoeboid movements carry them into the lymphatics. Generally it is the function of the lymphatics as absorbents to pick up material substances insoluble in water such as bacteria, protozoa, and cancer cells, which are too large to enter the blood capillaries. Thus absorption is effected through the agency of phagocytes which reach the lymphatics by diapedesis. The reactions in the lymph nodes represent the struggle of the gland to detoxicate the pathologic agents.

There are no lymphatics in the liver other than in the portal connective tissue spaces. The star-shaped cells of Kupffer are endothelial cells with phagocytic properties lining the blood channels and sinuses of the liver. There is very little evidence to show that Kupffer cells differ in function from similar phagocytic endothelial cells lining the blood sinuses in the spleen, lymph nodes and other organs.

The voluntary muscles have no lymphatics outside the connective tissue spaces of the muscle sheaths, a fact which accounts for their remarkable resistance to infection.

Herring and McIntosh conclude that the lymphatics are probably not so numerous as is often believed, and that they are almost always confined to the true connective tissues. They have shown that the lymphatics are concerned with the absorption of solids and material which is insoluble in

water while the blood capillaries are concerned mainly with the absorption of material which is soluble in water.

The influence of secondary septic infection on the lymphatic manifestations of tuberculosis, syphilis, and carcinoma can hardly be overestimated. The tuberculous patient seldom dies from tuberculosis unless the infectious products are confined, producing injurious pressure as on the brain death results rather from the associated sepsis. When there are septic complications of tuberculous processes which are removable the prospect of cure or improvement is greatly enhanced. In cases of tuberculosis it is very important to eradicate all foci of infection in the tonsils, teeth, etc.

In syphilis the prospect of successful lymphatic defense is not good, and greater or smaller number of spirochetes escape from the lymphatic glands into the circulation. Undoubtedly there is more or less individual immunity to syphilis, but permanent arrest of the condition depends largely on specific medication, such as arsenaphenin and mercury rather than on spontaneously produced immunization. The removal of foci of infection and septic complications of syphilitic infection has been shown to be of great influence in aiding the arrest of the disease by appropriate treatment.

In cancer the prospect of successful glandular defense against the extension of the disease is exceedingly poor. There is reason to believe that in individual cases there is certain immunity to cancer.

Clinical and pathologic experience teaches that in the large majority of cases carcinomatous involvement of glands means incurability of the disease. It is true that glandular defense may be efficient for prolonged period, but when the lymphatics are involved the cancerous process ultimate cure is confined to small group of cases.

Experience has taught us the advisability of removing the primary source of the disease wherever possible, whether or not all of the involved lymph nodes can be extirpated especially if the disease is situated in septic region such as the stomach, intestines and rectum. A palliative resection, even if all the enlarged glands cannot be removed, will often add three years or more of comfortable existence. The author has had patients for whom palliative resection of the stomach was performed without removal of all the infected glands, who lived for three or more years in comfort and apparent health. This occurred also in cases in which the liver contained metastatic carcinomatous nodules. Palliative operations which remove the primary source of the disease may permit the body's defense to exert its full strength on the glandular and other secondary lesions.

Not all enlarged glands associated with cancer especially in septic situations such as the gastrointestinal tract, are due to carcinoma. The glands may enlarge if benign lesion, such as a chronic ulcer precedes the carcinomatous change. Chronic

steps involving the glands is not infrequently the glands may become so extremely hard as to appear malignant. This condition is quite constant in carcinomas of the large intestine.

SURGICAL DIAGNOSIS, PATHOLOGY AND THERAPEUTICS

Churchman, J. W. The Reverse Selective Bacteriostatic Action of Acid Fuchsin. *J. F. for Med.* 92: 277-279.

The selective bacteriostatic activity of gentian violet is now a well established fact. If bacteria are exposed to this dye and planted on plain agar all the more common Gram-positive spore-bearing aerobes are killed even by relatively short exposure. What is true of gentian violet is true also in greater or less degree of other basic dyes of the triphenylmethane group.

The term reverse selective activity is used in this article to indicate bacteriostatic property whose selective feature is the reverse of that of gentian violet.

The author discusses the activity of acid fuchsin and allied sulphonated substances under three headings, viz. penetration, chemical affinity, and method of ionization.

1. Penetration. The simplest explanation for the behavior of gentian violet and acid fuchsin toward bacteria is that the whole process is simply selective penetration. Gentian violet certainly penetrates Gram-positive bacteria, which it kills, more readily than Gram-negative bacteria, which it does not kill. That is to say it penetrates the living organisms. Tests of its staining power on fixed smears are of no value in this connection. The author found that gentian violet kills spores although it penetrates them little if at all, and by longer exposure may be made to penetrate Gram-negative bacteria which grow even when deeply stained. While under ordinary conditions of experiment, gentian violet is non-toxic for Gram-negative organisms, it may be made toxic for them by slightly increasing the temperature. Acid fuchsin also penetrates Gram-positive spore-bearers almost as readily as it penetrates those

which are Gram-negative but it kills the latter and spares the former.

Chemical affinity. That the reverse selective activity of acid fuchsin is in some way connected with the SO_3 radical in its molecule is strongly suggested by the results of experiments. The action might depend not so much on the presence of the sulphonate group as on the method of its bonding, although it is exhibited by substances such as chromotropic acid in which the SO_3 group is firmly attached, as well as by substances such as sulphonate acid, in which the bonding is very weak.

3. Ionization. The method of ionization of the two groups of dyes whose action has been studied may explain their behavior. The fact that one group is basic and the other is acid is suggestive. If this explanation is correct, Gram-positive spore-bearers

and Gram-negatives differ in their hydrogen ion concentration.

The author summarizes the results of his experiments as follows:

1. Acid fuchsin possesses a bacteriostatic power which is selective between Gram-negative and Gram-positive spore-bearing aerobic organisms. The selective feature is the reverse of that of gentian violet.

2. This reverse selective activity is possessed also by simpler sulphonated substances and appears to be dependent in some way on the presence of SO_3 radicals.

3. Selective penetration, if at all concerned in the behavior of gentian violet and acid fuchsin toward bacteria, must play a very minor rôle.

4. In the case of gentian violet the power to kill organisms and the power to prevent their growth run parallel so far as the selective feature is concerned. In the case of acid fuchsin, the bacteriostatic and bactericidal selective features do not run parallel.

5. *Bacillus pyocyaneus*, an organism resistant to gentian violet, is susceptible to acid fuchsin. This organism is the cause of annoying and persistent wound infections. The observations on the effect of the sulphonated substances may suggest a method of controlling these infections.

GEORGE E. BENTLEY, M.D.

Bentley, F. G., Campbell, W. R., and Fletcher, A. A. Further Clinical Experience with Insulin (Pancreatic Extracts) in the Treatment of Diabetic Mellitus. *Bull. M. J.* 92: 1, 4.

The authors have treated over fifty cases of diabetes mellitus with insulin. The most striking results were seen in children and young adults, but all of the patients were benefited. It is important to adjust the dosage of insulin so that the amount is sufficient to nullify the postprandial hyperglycemia and yet insufficient to cause a dangerous lowering of the blood sugar.

At the end of the preliminary period of observation on a fixed diet the amount of urine excreted by the majority of the patients with severe diabetes was fairly constant. This determination is most valuable as an indication of the amount of insulin to be employed. In certain cases however the daily excretion of sugar varied and it was impossible to determine the proper initial dose of insulin. Under such circumstances it is advisable to begin with a moderate dose and increase it gradually until the desired effect is obtained.

After the patients are freed from glycosuria and ketonuria they are permitted to use an adequate basal ration. As rule they then felt so well that they demanded increased food because of desire to eat. Other factors which must be decided are the patient's most suitable diet and condition of nutrition and the means which should be employed to attain them also to what extent work should be allowed. In the cases of most patients it seemed an

was to allow an increase in weight, reduction of the weight was effected by decreasing the food intake. In the cases of emaciated patients some increase in weight was believed desirable on account of the associated improvement in the general condition, resistance to infection etc. even though an increased amount of insulin was required. The results of the experiments are summarized as follows:

Under treatment with insulin in cases not otherwise amenable to treatment glycosuria is abolished ketones disappear from the urine and the blood, the blood sugar is markedly reduced and maintained at normal levels, the alkali reserve and alveolar carbon dioxide in cases of acidosis and coma return to normal, the respiratory quotient shows evidence of increased utilization of carbohydrates and the cardinal symptoms of diabetes mellitus are relieved, well marked clinical improvement being noted.

1. Insulin is specific in the treatment of diabetic coma.

2. Hypoglycemic reactions following the administration of insulin are relieved by the administration of carbohydrates and by the injection of epinephrin. GEORGE E. BULLARD, M.D.

Tierroff, W. J. Treatment by Diathermy. *Brit. M. J.* 1934, 43.

The first effect of diathermy is an increase in the temperature of the part treated, the later effects are relaxation of the tissues and dilation of the blood vessels with a consequent increase in the blood supply to the part treated. The therapeutic effects of diathermy are therefore explained by the lowering of the blood pressure, the relaxation of spasm with the relief of pain, and the improved nutrition of parts whose blood supply has been deficient.

It is in the relief of spasm and pressure, and therefore of pain, that diathermy finds one of its important indications in clinical practice. Neuritis, deep seated pain such as that associated with dysmenorrhoea, the spasm of a ureter excited by the passage of calculus, the hypertonicity of the lumbar muscles in lumbago, or of the neck muscles in torticollis, the muscular rigidity of local tetanus, the pain of a recently sprained ankle, are usually markedly relieved and often cured by this treatment. Atrophic conditions improve very much because of the nutritional effects of the increased blood supply.

In surgical diathermy the heat is concentrated on one spot, while in the medical applications it is distributed over a large area. Surgical diathermy differs from the destruction of tissue by heated irons or the Paquelin cautery in that, when properly applied, it effects destruction by heat coagulation rather than by charring or incineration.

Intra-canal growths, hemorrhoids, benign or malignant superficial growths like lipomas, enlarged tumours, naevi, etc. are suitable for this treatment. Diathermy is also a delicate and efficient method for depilation. WILFRED KAM, M.D.

EXPERIMENTAL SURGERY AND SURGICAL ANATOMY

Gassal, R. Homoplastic Transplantation of Explants from Adult Frog Skin. (Homoplastische Transplantation von Explantaten aus erwachsener Frochhaut). *Deutsche med. Wochenschr.* 9, 2, 1934, 63.

The author placed frog skin in the plasma of the frog, rat, chicken, and guinea pig, and in human blood plasma, and after varying intervals grafted this tissue upon the animal in whose serum it was placed.

The transplantation to the frog was successful; the remaining so-called homoplastic transplants after three to five days of apparent healing, were disquamated. The author draws the conclusion nevertheless that the superficial tissue in a heterogeneous medium develops heterogeneous characteristics, and considers it all worth while to determine whether heteroplastic tissue in a homogeneous medium will act as homoplastic tissue.

MILNER (2)

Torricci, L. The Accumulation in the Peritoneal Cavity of Gases Injected into the Veins. (Sull'accumulo nella cavità peritoneale dei gas iniettati nelle vene). *Riforma med.* 9, 1934, 105.

In a previous article the author reported experiments demonstrating that oxygen injected into the jugular vein may accumulate in the peritoneal cavity. In this article he states that the same phenomenon occurs when nitrogen and carbon dioxide are injected. The experiments were made on guinea pigs. The only important difference observed was that the animals died much more quickly following the injecting of the two gases than after the injection of oxygen.

Previous observers believed that the injected gas traverses the pulmonary circle, spreads to the left heart and reaches the subperitoneal vascular territory through the arterial network. Torricci believes the mechanism may be different because in many cases a very large quantity of gas is found in the inferior vena cava and its branches (especially the renal veins) as compared with that found in the left heart and the arteries, and because the quantity of gas which can be made to collect in the peritoneum by increasing the pressure and duration of the injection compares well with that contained in the left heart and the arteries.

The assumption seems permissible that the gas reaches the right auricle from the superior vena cava whence it spreads into the underlying ventricle and then passes into the inferior vena cava and by the retrograde route into the venous system of the lower part of the body. In this way it reaches the subperitoneal regions directly by the venous system and enters the peritoneal cavity by passing through the venous walls. This view is supported by the fact that the phenomenon can be produced in the cauda. R. A. BARRER.

Olivier E. The Topography of the Nerves of the Brachial Plexus and Axillary Vessels at their Entrance into the Subclavicular Space (Noter la topographie des nerfs du plexus brachial et des vaisseaux axillaires à leur entrée dans l'espace sous-claviculaire) *Presse méd. Par.* 93, 10, 108

The divergence of opinion relative to the anatomical relation of the cords of the brachial plexus to the axillary vessels led the author to investigate this question. Opposite the first rib the axillary artery is situated lateral to the vein and is separated from the subclavicular muscle and the vein by the nerve to the pectoralis major muscle. At this point it is very difficult to ligate the artery, as it is partially overlapped by the vein medially and is closely associated laterally with the medial and posterior cords of the brachial plexus. Here the cords of the plexus lie lateral to the artery and are intimately bound together.

Distally they gradually course from the medial and lateral cords to a superficial to deeper plane. The lateral cord is most superficial, closely adherent to the under surface of the subclavicular muscle and in the same plane as the large subclavicular lymphatic gland. Laterally this cord has the subscapular nerve. Behind it and in a deeper plane is the nerve to the serratus anterior muscle. Immediately below it and medial to the lateral cord lies the medial cord of the plexus. This structure is crossed anteriorly by the nerve to the pectoralis major, which has divided into two branches. The posterior cord lies upon a deeper plane and in the angle formed by the axillary artery and the first rib. Gradually it comes to lie between the artery and the upper surface of the first rib.

In ligating the artery beneath the clavicle it is therefore necessary to exercise great care in separating the overlying structures and in passing the ligature to avoid injuring the posterior cord of the plexus. *LOTAL T. DAVIS, M.D.*

Felix W. Anatomical, Experimental, and Clinical Investigations Concerning the Phrenic Nerve and the Innervation of the Diaphragm (Anatomische, experimentelle und klinische Untersuchungen über den Phrenicus und über die Zwerchfellinnervation) *Deutsche Zeitschr. f. Chir.* 9, 12, 313

In the present research the author has brought forward the following questions: (1) To what vessels does the phrenic nerve furnish the sensory nerve supply and what is the nature of this sensation? (2) What is the significance of the connection between the phrenic and sympathetic? (3) How is the musculature of the diaphragm innervated and what is the sensory nerve supply of its serous coverings? (4) Can the typical section of the phrenic nerve be so modified that it includes the accessory nerves which occur as frequent variations?

The anatomical investigations undertaken to answer the questions consisted in following the course and distribution of the phrenic nerve in

series of human embryos and in attempting to determine its communications with other nerves. In addition the author gives a review from the literature of the variations occurring in the course of the phrenic, and of their topography from a surgical standpoint.

The results of these investigations are summarized in the following statements:

1. The phrenic nerve furnishes the sensory nerve supply to the diaphragmatic pleura and to the peritoneum covering the diaphragm. It does not give any branches to the pericardium. The diaphragmatic pleura and the peritoneum covering the diaphragm contain sensory fibers from the phrenic nerve only in their central portions and particularly in the lumbar portions.

In the neck the phrenic nerve receives one or more small branches from the plexus (plexus supra-pleuralis) which is primarily sympathetic and gas-ganglionated and which lies upon the roots of the plexus. Since branches from the last cervical and first thoracic nerves take part in the formation of the supra-pleural plexus, the branches of the plexus which pass into the phrenic nerve may contain small fibers in addition to their principal sympathetic component.

3. In the subperitoneal connective tissue of the diaphragm particularly in the lumbar area the phrenic nerve anastomoses with the sympathetic nerve. At that point there is an essentially sympathetic gas-ganglionated plexus called the "plexus phrenicus." Branches of the coeliac plexus, the phrenic ganglion, and numerous sympathetic ganglia participate in its formation.

4. Since all the branches of the phrenic nerve which have sensory endings in the serous coverings of the diaphragm communicate with the sympathetic it is possible that the sensory branches of the phrenic nerve are formed of sympathetic fibers. Since a few of the motor branches of the phrenic communicate with the sympathetic, it is possible that the sympathetic also carries fibers for the musculature of the diaphragm.

5. In its entire course the phrenic nerve contains non-medullated sympathetic fibers. They lie nested in bundles in the periphery of its transverse section.

6. The lowest intercostal nerves (eighth to twelfth) take part in the sensory innervation of both the serous coverings of the diaphragm. They innervate the ribbon like strip upon that portion of the diaphragm which takes origin from the ribs.

7. The twelfth intercostal nerve supplies motor fibers to the serration of the diaphragm coming from the twelfth rib. This may also be established embryologically since the isolated absence of the serration in case of congenital hernia of the diaphragm points to special innervation.

The author gives the following summary of the variations and topography of the phrenic nerve.

Among the variations of the phrenic nerve there are two of especial importance for the surgeon. First, certain portions of the phrenic trunk may

take an abnormal course (accessory phrenic) and therefore are not divided in section of the phrenic nerve. Secondly these accessory nerves may take the form of a single nerve at the lateral border of the scalenus anterior. This is a rare variation. A number of anatomical facts suggest that the peritoneal exposure of the phrenic nerve above the omohyoid muscle is more practical than that below.

The clinical part of the work attempts to answer the following questions: (1) What is the basis of the generally accepted conception as to the sensory function of the phrenic nerve? (2) What is the significance of the connection between the sympathetic and phrenic nerves? (3) In using local anesthesia in intrathoracic operations must the phrenic nerve be blocked in order to anesthetize the parietal pleura, the pericardium and the peritoneum covering the diaphragm? (4) Can section of the phrenic nerve be so modified that all of its motor fibers are

If as those of the accessory phrenic nerves for the half of the diaphragm concerned will be divided.

On the basis of his own experimental investigations with stimulation of the central stump after section of the phrenic nerve and from his own clinical observations the author concludes that the phrenic nerve is able to transmit impulses centralward, and that this is the explanation of the long recognized shoulder pains in affections involving the course and distribution of the phrenic nerve. Pain in the summit of the diaphragm and in the upper abdomen on the other hand, must be ascribed not to the phrenic nerve but to the intercostal nerves. Moreover the fact comes to the conclusion that the sensory function of the phrenic depends upon the sympathetic fibers it contains. A stimulation of the sympathetic nervous endings of the phrenic nerve in the diaphragm is followed by the peripheral projection of sensation in the region of the suprascapular nerves of the central nervous system. Upon stimulation of these sympathetic fibers of the phrenic nerve depend also the frequently occurring abnormal contractions of the diaphragm as, for example in angustia. The answer to Question 3 follows from the results of the anatomical investigations.

Finally upon the basis of twenty-eight cases—among them ten cases with an accessory phrenic nerve—in which sections of the phrenic with subsequent exeresis (extirpation of the peripheral stump from the thorax) was carried out, this method is recommended as the safest to secure paralysis of half of the diaphragm. Mirza (Z)

ROENTGENOLOGY AND RADIUM THERAPY

Schultz, H. A Summary of the Determination of X Ray Intensities. *J. Rad. et.* 1913, 14.

In previous communication the author reported ed investigations made by himself with regard to roentgen ray intensities. These investigations are carried out to determine method of treatment for deep carcinomata which could assure the

application of roentgen rays of a sufficient intensity to cause degeneration or death of the cancer growth. The constant factors were a maximum kilovoltage of 50 determined with sphere gap in series with the tube terminals, milliamperage 15 and broad focus Coolidge tube 8 cm in diameter. The

variable factors were the distances from the focus or target of the tube to the surface of the skin, the ports of entry and the filter. A summary of the results obtained is given in tables and the conclusions reached at that time are again presented.

With the collaboration of B. Chem the investigations have been extended to crest kilovoltages of 50, 75, 100 and 150. The results are shown in table 1. The clinical application of these results and economic considerations, viz. the saving of the tubes by the avoidance of large loads, led to the adoption of the following factors: maximum kilovoltage 100 milliamperage 5 focal skin distance, 50 cm. field, 20 to 30 cm square filter mm copper plus mm aluminum. The number of fields is to be an anterior and posterior. It is necessary only to determine the anteroposterior diameter. The advantages gained by the newer method are:

1. Shortening of the time duration of the application of the roentgen ray. If 5 ma are used the total field application consumes from three to four hours. The method using maximum kilovoltage of 50 consumes from twelve to fourteen hours.

Radiation sickness is not nearly as severe when the maximum kilovoltage is 100 as when it is 50. Apparently the destruction of the blood corpuscles in normal tissues is less severe than with the old method.

3. The tumor is more rapidly resorbed evidently because of the greater biological action of the shorter

roentgen ray. It must be assumed, though it cannot yet be proved that the shorter the wave length of the radiation the more intense the biological action on the tumor cells. The gamma rays of radium have the shortest wavelength (any radiation known). Gamma rays of radioactive substances cause much more rapid regression of cancer tumor than any roentgen ray produced so far.

4. The same intensities of radiation may be more reproducibly if the same factors that is, kilovoltage, focus skin distance, filter size, field and tube are employed. It is desirable however to determine the duration of the application carefully for each transformer and for each tube.

ARTHUR HARRIS, M.D.

Glaeser, O. Newer Investigations of the Problem of Roentgen-Ray Dosage. *Am. J. Roentgenol.* 1913, 9, 5.

In the investigations reported sharp distinction was maintained between the problems of biologic dosage and those of relative (practical) dosage. The author states that the solution of the problem of absolute or scientific dosage on the basis of the mechanism of ray effect should lead to the construction of an ideal dose-measuring apparatus.

Mention is made of previous work done along the same line. A detailed description of ionization chambers used in the investigations is given. The results are presented by curves. Most of the subject matter of the article is highly technical and considered from the viewpoint of the physicist rather than that of the physician.

ANDREW HARTUNG, M.D.

Fallis, G. Ionization Measurements. *Am J Roentgenol* 93: 43

During the last few years ionization measurements have assumed considerable importance in radiation therapy. In order that information relating thereto may be readily available, the author has summarized briefly the essential facts of such measurements. He defines ionization and ionization currents at some length and describes in detail measuring instruments used to determine their amount as produced by radiations from radium and roentgen rays.

It is very probable that the biological effects of radiation are closely related to the ionization produced in the tissues irradiated. As the ionization cannot be measured directly the attempt is made to correlate biological effects and ionization in the air of an ionization chamber.

In conclusion, the author states that ionization measurements of radiation for therapeutic purposes are reliable provided the quality of the radiation and the distribution of the ionization in the chamber are not very different for the different measurements. The instrument must be properly designed and constructed as regards the type of ionization chamber, insulation, electrical shielding, screening from extraneous radiation, and saturation, and should be calibrated every day or oftener if a change is suspected, by means of radium standard.

ANDREW HARTUNG, M.D.

Smithies, F.: The Necessity for Caution in the Employment of High-Voltage Roentgen Rays as a Therapeutic Agent Against Malignant Diseases. Acute Adrenal Insufficiency and Death as Sequelae. *Surg Gynec & Obst* 93: xxxvi, 6

Medical literature contains very few if any warnings against the new high-voltage roentgen therapy. Articles are concerned chiefly with the gross effects of the treatment upon the neoplasm, giving scant attention to pathologic changes in tissues part from those in which tumors are situated or to the clinical phenomena observable in cancer hosts.

The case reported by Smithies was that of a man 58 years of age who fell on his back from horse. As soreness of the back persisted, roentgenograms were made. The diagnosis as early osteosarcoma. Roentgen therapy with a voltage of about 30,000 was advised and accepted. Three sittings lasting several hours at least were given. So far as could be ascertained one treatment was

given through and through from the back, directly over the supposedly sarcomatous area, and two cross fire treatments were given from the back at an angle of about 60 degrees to the spine. The patient was then sent home.

There were no immediate ill effects, but within month symptoms which became progressively worse led to a diagnosis of Addison's disease. Death occurred within four months.

In his résumé the author states that instances of acute or "fulminant" Addison syndrome are rare and that it is most unusual for the disease to develop after the age of 50 or for death to occur within a year. It appears to Smithies improbable that in the case reported the patient's fall caused acute bilateral adrenal injury and failure. The man was in good health when he sustained his accident; it seemed to be nothing more than bruising of the paraspinal muscles and he remained well, despite his slight muscular lameness, until a few weeks after the roentgen exposures. Thereafter his collapse was rapid.

The proximity of the adrenals to the areas treated by the high-voltage roentgen ray for long time-intervals strongly suggests that the treatment is responsible for the acute collapse of adrenal function and doubtless for the destruction of chromaffin tissue.

Unfortunately autopsy was not permitted.

ANDREW HARTUNG, M.D.

Gaylord, H. R. and Stenstrom, K. W. Comparative Measurements Between Radium and X Rays Concerning Energy Absorbed at Depth. *Am J Roentgenol* 93: 56

Having at their disposal an adequate amount of radium, and roentgen-ray apparatus capable of continuous operation at 500,000 volts, the authors attempted to determine the relative penetrating quality of these two agencies by measurements at similar distances and similar distribution. The measurements are made with ionization chambers built according to the description given by Friedrich. Some of the experiments made are described in detail and the results tabulated.

The authors conclude that for external radiation such huge amounts of radium could be required to compete with existing roentgen equipment that the cost would be prohibitive. Moreover the difficulty of obtaining adequate protection from such large amounts would constitute an insurmountable obstacle.

In some instances moderate amounts of radium in properly arranged packs will be found to meet special conditions better than the roentgen ray, but these cases are few. With the improvements which may be expected in the near future, the field of usefulness of the radium pack of moderate size will be increased. The advantages of the roentgen rays apply only to external radiation. Cases in which the growth can be reached and radium or emanation of radium can be planted into the sub-

stance of the tumor the roentgen ray cannot displace radium, but they may be usefully combined with the implantation. ADOLPH HARTUNG, M D

Deland, E. M. Radium Treatment of Keloids. *Surg G & Obst* 923 XXVI, 63

Many methods of treatment have been tried in the attempt to find a cure for keloid growths, but until the appearance of light therapy none was uniformly satisfactory. The Finson ray proved fairly effective and the roentgen ray more so, but in the opinion of the author radium is the best therapeutic agent thus far discovered.

Fifty-eight cases are discussed in this article. Forty-eight were treated with radium alone. Many different methods of treatment were tried to ascertain which could yield the best results. It was noted that there was a fairly definite relationship between the age of the lesion and the amount of radiation necessary to eradicate it. Keloids in children responded more quickly to treatment than those in adults. The majority of the adults were treated with steel jacketed tubes laid directly on the lesion or raised on to 5 mm of gauze. The average dose per tube was 5 mc-hrs and the average number of treatments, six. In two cases required exactly the same dosage. In some, 1 mc-hrs caused very little reaction, while in others 30 mc-hrs caused only slight redness. Occasionally 0.5 mm of silver was used when the unfiltered tube caused excessive reaction.

Ten of the forty-eight cases are still under treatment. In twenty-six of the others the lesion has been completely destroyed. Three patients ceased treatment before sufficient number of applications had been made. In two cases the results were unsatisfactory as the keloids, which were of long duration, were treated with too heavy filtration. There have been no recurrences, either in the cases treated by absorption doses or in those treated by actual destruction of the lesion. In two cases new keloids developed near the old ones. Every case treated as benefited. The first evidence of relief was the development of certain degree of anasthesia in the lesion. Later the itching and pulling sensation ceased. Finally there was softening of the scar. In the cases treated with absorption doses there was less variation from the normal color of the skin. In a few of the cases treated with ulcerating doses there was telangiectasis, but this was by no means always sequela.

The author draws the following conclusions:
1. It seems probable that every keloid can be destroyed by radium if sufficient dose is used.

Silver filtration (1 mm) should be used for keloids of recent origin in the cases of children, in the cases of persons with dark complexion, and in exposed areas such as the face. The dosage should be from 30 to 60 mc-hrs according to the age of the patient.

2. On all other keloids practically unfiltered tubes should be used. The dosage should be from 3 to

30 mc-hrs per tube. It should be explained to the patient that ulceration will result from this treatment.

3. There is no evidence to show that the destructive doses damage the tissues so that the lesions will recur. There is no lessening of the tendency of the individual to develop keloids.

ADOLPH HARTUNG, M D

Levin, I., and Levine M. The Action of Buried Tubes of Radium Emanation on Neoplasms in Plants. *J Cancer Research*, 9 11, 63

Normal tissues used in the experiments consisted of young and adult roots of the purple top turnip and the growing tips of the tobacco plant. The pathologic material consisted chiefly of club roots artificially produced on cabbage and kohlrabi, and crown galls on the geranium. Capillary tubes 3 mm long and 0.25 mm in diameter containing radium emanation were introduced into the plant through a small opening made by means of a sterile needle.

The tube of radium emanation was left buried in the tissue for from one to fifteen days, the plants being examined carefully during that time at regular intervals. For controls, empty tubes of the same size as those containing the emanation were inserted into identical tissues.

In the normal root tissue the only perceptible result from the insertion of radium emanation tube was complete destruction of tissue in the immediate vicinity of the tube. In the tissue beyond this area there was no change corresponding to that noted in normal tissue. Adult tissue was not affected by moderate amounts of gamma radiation.

D VINCENT BOYD, M D

LEGAL MEDICINE

Ottenberg, R. The Medicolegal Application of Human Blood Grouping: Sources of Error in Blood Group Tests and Criteria of Reliability in Investigations on Heredity of Blood Groups. *J Am Med Ass* 9 June, 37

The author considers Vincent's open-slide method the best test for blood compatibility. One drop of serum on a slide is added one drop of cell emulsion. The slide is tilted and rotated gently every few minutes to distribute the cells evenly. Agglutination is easily seen with the naked eye in from one to ten minutes at room temperature. Observation should not be longer than fifteen minutes. The microscope should not be used. Genuine agglutination is always visible to the unaided eye. If the slides are not moved after the first fifteen minutes, the film may be dried, painted with a layer of collodion and kept for a permanent record.

In the test tube method too much serum is required and weak agglutination may be overlooked. The modified Wright capillary pipette method calls for too much glassware and experience. The hanging-drop method with hollow ground slides

settling of the red corpuscles suggests massive agglutination

Sources of error in the test are deteriorated or weak sera, haemolysis, incubation at 37 degrees C, drying, settling of the cells, microscope observation, dense cell emulsions, undeveloped group characters in children and into agglutination.

As precautionary measures the author recommends duplicate tests with different sets of test sera shown to be active at the time of the tests, tests of both the serum and the cells whenever there is doubt, and examinations of the cell emulsion without the addition of test serum.

In studies of human heredity the accidental inclusion of cases of illegitimacy can best be avoided if the mother of each family understands the object of the examinations and consents to them.

The instances in which it is possible to predict the remaining parent when the children and one parent are known are shown in the following table. Children of Group 1 are disregarded because, as they show only recessive qualities, they can come from any combination of parents. The occurrence

of additional children of Group 1 does not alter the prediction as to the remaining parent.

PREDICTION OF REMAINING PARENT GROUP		
Known children Group	Known parent Group	Other parent must be in Group
		or
		or
		or
		or
2 and 3		or
2 and 4	1	or
3 and 4		or
1 and 2		or
1 and 3		or
1 and 4		or
2 and 3	1	or

*The combinations of children (Groups 2 and 3) and 4) has not yet been described in the literature. October points out that its occurrence would depend on genes and crossing in the chromosomes.

WALTER C. BURKET, M.D.

GYNECOLOGY

UTERUS

Grad. II. The Pathology of Uterine Bleeding in 100 Analyzed Cases. *Am J Obst & Gynec* 9:3

37

From the study of the pathologic findings in 100 cases of uterine bleeding here reported it was found that the cases may be divided into six classes according to the causes of the loss of blood from the uterus. These causes include pregnancy infection, neoplasms of the uterus and ovaries, dysplastic lacerations, congestion, endocrine disturbance, constitutional causes, and blood dyscrasias.

In 70 per cent of the cases the pathologic changes in the endometrium played the most important rôle in uterine bleeding. In thirty-four cases the chief cause of the endometrial pathology was infection, in twenty-five cases neoplasm, and in eleven cases, hyperfunction of the ovaries.

Uterine bleeding is caused also by vascular engorgement of the uterus and direct focal infection of the genitalive organs.

Pregnancy including ectopic gestation is an important etiological factor of uterine bleeding. It was present in thirteen cases.

Constitutional causes are of minor importance. After incomplete abortion the endometrium undergoes the physiologic change incident to menstruation but the uterus can usually harbor retained secundines which cause continued uterine bleeding.

In cases of uterine bleeding with history of infection, the bleeding is due to diseased endometrium, the disease remaining perfectly normal.

Curettage of the uterus is very important procedure in cases of uterine bleeding, as the bleeding may depend entirely on the condition of the endometrium even though other pathologic entities may be present, such as diurnal disease, fibroids, etc.

Two or more causes may operate in the same case at the same time.

Adenoma polypus of the endometrium is responsible for uterine bleeding in large number of cases (at least 20 per cent) and is a distinct entity. Uterine glands penetrating the musculature may also be cause.

There are certain number of cases of uterine bleeding in which the cause is purely no pathologic changes being found to account for the hemorrhage (eleven in the series reviewed). These have been called cases of ovarian hyperfunction.

In certain number of cases the uterine bleeding depends on displacements and lacerations caused by vascular engorgement and focal infection.

Submucous fibroids cause uterine bleeding by bringing about changes in the endometrium overlying the neoplasm.

In very small number of cases uterine bleeding may be caused by degeneration of neoplasm, the necrosis causing cell destruction and the escape of blood directly into the uterine cavity.

F. L. COE, M.D.

Norma, C. C. The Microscope as Compared with the Clinical Diagnosis of Malignant Uterine Neoplasms. *Am J Obst & Gynec* 9:3

Cancer of the cervix can generally be diagnosed correctly by clinical methods. Of series of 53 cases, 84 per cent were diagnosed positively by the clinician and 4 per cent were suspected. In only 23 per cent was malignancy unsuspected by the clinicians.

In carcinoma of the cervix the lesion is not only fairly characteristic clinically, but also easily accessible to inspection and touch and can be examined thoroughly during the course of an ordinary gynecological examination. Furthermore, in doubtful cases biopsy is a simple procedure.

Of the 53 cases studied only 6 per cent were in the early stages. Carcinoma of the cervix gives relatively small proportion of five-year cures regardless of the method of treatment. The urgent necessity for early diagnosis is therefore apparent.

In carcinoma of the fundus conditions are different. The lesion can neither be inspected nor palpated and for final diagnosis even the experienced gynecologist is forced to depend more or less upon microscopic examination.

There are many intra-uterine lesions which may be confused with carcinoma. One of the most common is carcinoma combined with myoma. An analysis of the cases studied also that at least 75 per cent of the erroneous diagnoses were due to this condition. Of the cases of carcinoma of the fundus no fewer than twenty were diagnosed clinically as benign; fifty-seven were diagnosed clinically as malignant and in additional twenty-four malignancy was suspected. This is sufficient evidence to prove the importance of routine histologic examination.

Of the entire series of cases of carcinoma of the fundus curettings alone were submitted to the laboratory in fifty-eight cases. The clinical diagnosis was positive in twenty-one (36 per cent), the clinical diagnosis was doubtful or malignancy was suspected in twenty cases and the condition was regarded as benign in fifteen (58 per cent).

The frequency of sarcoma has been greatly overestimated in the past, some pathologists asserting that 10 per cent of all myomata possess malignant characteristics. The author reviews thirty-five cases of sarcoma. During the same period of time

that these cases were treated. 36 fibromyomata of the uterus were removed. Of the thirty-five malignant connective-tissue tumors, only eight appeared to be degenerations of previously benign neoplasms. Therefore in this series sarcomatous degenerations of myomata occurred in only about 0.6 of 1 per cent of the cases. None of the patients with myoma has had recurrence, but over 80 per cent of those with sarcom are dead.

Chorio-epitheliomata vary markedly as regards malignancy. A diagnosis from the curettings alone is often impossible. The author has encountered only six cases. Three of these were manifestly malignant and were readily diagnosed from the curettings.

In the entire series of 39 cases of malignant tumors the clinical diagnosis was positive and correct in 27 (69.3 per cent) the true condition was suspected in an additional fifty-nine cases (15 per cent) the clinical diagnosis was malignancy but the type of neoplasm was not recognized in fifteen (3.8 per cent) and the condition was regarded clinically as benign and its true character determined only on histologic examination in forty-five (11.5 per cent).

In conclusion the author states that the laboratory should have the benefit of clinical evidence in all cases, and the follow up of the clinic should serve as a check on the laboratory diagnosis.

E. L. CORVILL, M.D.

EXTERNAL GENITALIA

Girard F. R. Posterior Vaginal Drainage, with a Description of New Instrument Used as Vaginal Pelvic Girdle. *California State J. M.* 1913, XII, 9.

The author has devised an instrument which he believes is new. He describes it as a clamp approximately 35 cm. long with a double curve. When closed the end forms an oval ball 3.5 cm. wide and 5 cm. high. The anterior surface of the ball is grooved transversely. The operator feels this groove through the stretched tissues of the posterior fornix and makes his incision directly down on the ball of the instrument, thus avoiding injury of the rectum, which is held back by the lower half of the ball while the back of the cervix is pushed forward by the upper half. If a large opening is desired, crucial incision can be made at will with the ball as guide.

When there is a possibility that vaginal drainage will be desired, the vagina should be cleansed before the operation is begun by scrubbing it with green soap and water, washing it with solution of lysol, and painting with a 1 per cent solution of iodine.

The tip of the instrument is dipped into sterile lubricant or soap solution, and inserted between the labia just below the urethra. The handle of the instrument is held pen-fashion and the instrument pressed downward and forward so that the rounded extremity slides along the posterior wall of the vagina. As the instrument is introduced the han-

dles are depressed until they are opposite the vaginal orifice, when the rounded extremity of the instrument will be found stretching the posterior fornix. The instrument can be inserted by force, and there is no possibility that it will be inserted into the urethra or rectum.

After the operator has made his incision, the clamp is opened by the assistant and drainage material is placed between the jaws of the grade and withdrawn into the vagina.

The author uses a paraffin gauze drain which can be laid in strips between plane gauze and the wound or used as a casing for a cigarette drain. These drains are removed gradually by shortening them an inch or so on the fourth day, removing half on the fifth day and removing all the remainder by the sixth or seventh day.

It is sometimes necessary to dilate the opening in the posterior fornix if it shows tendency to close up rapidly and dam back the secretions in the pelvis. Following the removal of the pelvic drains, the sinus should not be irrigated. If the discharge is abundant, the author advises gentle mopping out with gauze.

C. H. Davis, M.D.

MISCELLANEOUS

Frank, R. T. The Treatment of Cystocoele, Rectocoele, and Uterine Prolapse. *Am. J. Obst. & Gynec.* 1913, 8.

Childbirth causes injuries to the muscular, fascial, and connective tissue structures of the pelvis. The triangular ligament may be torn, one or both of the puborectal loops of muscles may be avulsed from the pubic bones, the genital hiatus may be greatly dilated, or the pubocervical fascia may be split. It is not always possible to define or recognize the lesions most injured. In general, however, three main types of injury result and can be recognized and corrected.

The signs of these injuries appear either separately or combined in the form of cystocoele, rectocoele, and prolapse of the uterus.

Not every case of cystocoele and prolapse requires operative intervention. Many women should be taken over the period of child bearing by palliative measures.

If the perineum is intact, cystocoele alone may be retained by Skene or a Gehrung pessary.

Prolapse of the uterus in young women who desire to have more children may be kept back with simple pessaries such as the sacro-pessary of Schatz, the hard rubber ring, and the globe and egg shaped pessaries. It is unwise to operate upon old debilitated women who are poor operative risks. In such cases also pessaries should be used.

If operation is to be performed upon women who desire to have more children, the vaginal tube and outlet must not be unduly narrowed. Care must be exercised in repairing the cervix. Trachelorrhaphy according to Emmet method is preferable to amputation or tracheloplasty (by coning) because amputa-

tion frequently induces sterility or if pregnancy supervenes causes severe distocia. If the uterus is displaced, either retroflexed or retroposed, the correct operations should aim to shorten the round ligaments and should not fasten the uterus to the abdominal wall.

In the cases of women who are to be sterilized at operation or who have passed the menopause three methods of operation may be considered.

Repair of the anterior and posterior vaginal wall and perineum from below followed by entero-fixation.

2. Interposition of the uterus between the inferior bladder wall and the vagina, and repair of the perineum.

3. Vaginal hysterectomy with suture of the lateral stumps below the bladder followed by perineal repair.

In the cases of very old women and those in which there has been severe recurrence of prolapse after vaginal hysterectomy obliteration of the vagina may be done.

With very few exceptions the author found that the first method, repair of the cystocele and rectocele from below combined with either the Alexander-Adams operation or entero-fixation from above is applicable to all varieties of prolapse.

Occasionally in the cases of port wine women, when laparotomy is relatively hazardous and large cystocele causes the most serious disability, he has used the interposition operation.

He has never employed vaginal hysterectomy with utilization of the broad ligament stumps as described by Goffe, and would reserve this procedure for those rare cases of prolapse in which vaginal hysterectomy is indicated for some other condition

such as corporeal cancer. In a number of cases this technique was followed by huge recurrences of the cystocele. Such recurrent cystoceles may prove incurable as the central support of the pelvic connective tissue from which the supporting fibers radiate, namely the supra-urethral part of the cervix, has been removed.

The repair of cystocele consists in separation of the descended bladder from the uterine cervix, repair of the pubocervical fascia in the median line, and suture of this structure high up to the cervico-uterine juncture so as to re-establish tense continuous bladder shelf.

Repair of high rectocele consists in exposure of the anterior rectal wall high up, opening of the Douglas cul-de-sac, obliteration of this pouch by circular suture and repair of the torn rectal fascia. This repair is usually combined with repair of a low rectocele and torn perineal body.

The repair of low rectocele and a lacerated perineum consists in exposure of the anterior rectal wall and separation of the levator edges of triangular ligament *en masse*.

If the anatomy of the pelvic outlet is understood, if cases are judiciously selected and if the technique described is followed the results are fully as satisfactory as those obtained by the radical treatment of inguinal hernia, but a certain number of recurrences are to be expected, especially in the cases of patients with flaccid tissues and general enteroplasia. It should be emphasized that patients whose complaints and pains did not arise from the pressure or lacerations of the cervix, the small cystocele and the negligible rectocele present will not be benefited by unnecessary plastic repair. F. L. CORVILL, M.D.

OBSTETRICS

PREGNANCY AND ITS COMPLICATIONS

Rowley W N. Observations on the Blood Sugar During Pregnancy and the Puerperium. *Am J Obst & Gynec* 923, 3

Determinations were made of the sugar content of the maternal blood, before term, and on the second morning after delivery. The sugar values of the cord blood were also studied. In the series reported some of the patients had diabetes or glycosuria. The average blood sugar of fifty-three women during pregnancy was 0.15 mgm for each 100 ccm. The average value for the cord blood was 0.09 mgm for each 100 ccm. The effect of anaesthesia on this value is negligible. From these findings the author concludes that the placental interchange of glucose can take place by the process of diffusion from the maternal side to the fetal side. The average postpartum value of the blood sugar was 0.14 mgm for each 100 ccm. Hence, the sugar content of the maternal blood during pregnancy is less than that during the puerperium and greater than that of the cord blood.

Women whose pregnancy as complicated by protracted nausea and vomiting showed amounts of blood sugar which were consistently higher than those of women who did not have these complications. Rowley concludes that muscular work is not a factor in the production of postpartum hyperglycemia; that their anæsthesia is contributing but not necessarily determining factor; the production of rise in the blood sugar concentration of cord blood (in the experiments reported every effort was made to minimize the effect of anaesthesia) and that it is impossible to show that involution of the uterus is primary factor in producing postpartum hyperglycemia. In certain types of toxæmia the blood sugar is increased.

Webb, W E. and Van Nest, A. E. The Sugar Test in Pregnancy. *Am J Obst & Gynec* 933, 13

When first seen the patient is told to come to the clinic the next morning without breakfast. She is then catheterized and the urine examined. If the urine is normal the test is continued and specimen of blood is taken for chemical examination. When this has been done the patient is given 50 gm of glucose dissolved in 500 ccm of tea and kept in the prone position for forty-five minutes to prevent vomiting.

Forty-five minutes, one hour and one and one-half hours after the ingestion of the sugar, catheterized specimen of urine is again examined for sugar. Blood for second sugar examination is usually taken between the one hour and the one and one-half hour periods.

Blood sugar determinations are made by the Folin method, and urine sugar determinations by means of Benedict and Fehling's solutions. The content of sugar in the urine is usually between 2 and 5 per cent. Most of the positive cases will give positive urine in forty-five minutes but in some the test will not be positive before an hour or hour and half. Since adding the examination at the end of one hour and half the authors have found four cases which did not give positive reactions until the last specimen was obtained.

Webb and Van Nest believe that spontaneous or artificially induced renal glycosuria with blood sugar content below 19 per cent in the first twelve weeks after conception is valuable aid in the early diagnosis of pregnancy. The test has proved correct in more than 95 per cent of their cases.

E. L. COOKE, M.D.

Hilton, W. A. The Wassermann Reaction in Pregnancy. *Am J S Abstr* 933, 35

This is a study of the Wassermann reaction of the blood of 6,437 pregnant women. The tests were made during the period from June 9, 1915 to June 9, 1916 and formed part of the routine examination of these women. The purpose of the article is to draw attention to the efficiency of cholesterin used antigens in the Wassermann reaction in pregnancy and to give some idea of the prevalence of syphilis among women of the dispensary class.

The results obtained in this study should be compared with those which are obtained by the same technique in a group of 3,700 naval students and a penal group of 804 women (Table I).

These figures which are from highly syphilitic and an essentially non-syphilitic aggregate, are given to point out the comparative prevalence of the disease in well defined groups as shown by the Wassermann test performed with the same uniform technique.

Table II gives the figures for the entire group. The percentages of positive and doubtful reactions in the first institutions are quite different from those in the last two. The results for the England Hospital can be explained easily by the manner of obtaining the specimens and agree with the observation of others that cord blood is only about one-third as effective in the detection of syphilis by the Wassermann test as blood obtained by the usual venous puncture. The table indicates also low incidence of positive reactions in the cases of the L. O. Corporation which is accounted for by the fact that roughly 80 per cent of the patients are of foreign birth or descent. The figures from the Florence Crittenton Home are particularly interesting inasmuch as only young, unmarried

INTERNATIONAL ABSTRACT OF SURGERY

foreign population. The one exception lies with the Syrians who show about the same percentage as the white persons born in the United States and Canada.

An analysis by age groups is given in Table IV. The most important fact to be learned from this table is that congenital syphilis must play a very small part in maternity. If we assume that the single point case among the 30 patients ranging in age from 1 to 7 years was a case of congenital syphilis, the incidence is less than 1 per cent. This is greatly below that of the five groups over 7 years of age who constitute the majority.

Since pregnancy is a natural physiological function, few if any of these women sought medical attention because of acute or chronic illness. It was found that persons of greater intelligence show a uniformly lower incidence of positive tests while those of lesser mentality show a higher rate. This difference is realized on comparing the 37 naval aviation students, among whom the positive reactions equalled only 5 per cent, with the group of criminal women who were for the most part feeble minded and among whom the incidence of positive reactions was 40 per cent.

The conclusions drawn are as follows:
1. The statistics in this paper should indicate the prevalence of syphilis among the average women of Massachusetts of the dispensary class.

If we consider a positive reaction as diagnostic of syphilis, as in 4.8 per cent of these cases and a doubtful reaction as indicative of inadequately treated syphilis, as in 3.85 per cent, the total incidence of the disease in this class is 8.3 per cent.

3. Properly standardized cholesterinized antigens have yielded a negligible number of false positive reactions in child-bearing women.

C. H. D. VIX, M.D.

Kilgore, A. R. Tumors of the Breast Arising During Pregnancy and Lactation. *California State J. M.* 923, 220.

This article is based upon a series of 500 cases of breast lesions. The material studied was the laboratory records of Bloodgood at the Johns Hopkins Hospital and a number of records from the University of California Hospital.

The most common of all breast tumors appearing during pregnancy and lactation as well as at other times is cancer. The order of frequency of certain benign conditions changes materially during activity of the breast. Nearly 70 per cent of galactoceles, or milk cysts, arise in connection with breast activity. In over 5 per cent of cases of breast tuberculosis the condition develops during pregnancy or lactation—no doubt because of the lighting up of unrecognized foci in the breast by the increased circulation incident to function. In order of frequency the most common tumors developing during pregnancy and lactation are cancer, galactocoele, tuberculous, and adenomata. These constitute over 90 per cent of tumors appearing at these

TABLE I—PERCENTAGE OF TUMORS ARISING DURING PREGNANCY OR LACTATION

Tumor	Age group	Per cent	Per cent
Cancer	1009	49	4.6
Cancer (only patients under 47 years)			
Galactocoele	463	49	10
Tuberculous	39	13	33.4
Adenofibroma	34	9	26.5
Miscellaneous	215	6	3
Totals	74		
	5	26	5

TABLE II—EXPECTED AND ACTUAL INCIDENCE OF CANCER IN LACTATION IN THE REGISTERED AREA

Age group	Expected incidence of any disease during lactation to amount the same as at other times	Actual incidence of cancer during lactation
5-20	0	5
20-34	0	47
35-40	31	26
40-44	20	7
45-49	34	26

TABLE III—COMPARISON OF AGE INCREASE WITH AMONG CANCER IN LACTATION AND OTHER TIMES

Age group	Total breast cancer per 100 females in each age group	Lactation cancer per 100 females in each age group
5-20	7	3
20-34	4.4	21
35-40	4.3	14.5
40-44	5	61
45-49	43	3

periods. At other times than during functional activity chronic cystic mastitis in its tumorlike forms takes the place of galactocoele and tuberculous in frequency.

The incidence of both cancer and benign tumors is distributed fairly evenly over the various stages of pregnancy and lactation. The point of practical importance in this connection is that at no time out in the differential diagnosis can cancer be ruled out in the differential diagnosis. During the early months of lactation most lumps in the breast are inflammatory but in the series of cases reviewed 80 per cent of pregnancy and lactation cancers were first noted during the first four months of lactation. Therefore it is not safe to delay the exploration of a lump during pregnancy or lactation too long on the assumption that it is inflammatory.

Most interesting of all aspects of this subject is the question of the relation of breast activity to cancer. It is fairly well established that previous

normal lactation does not render a woman more apt to develop breast cancer in later life than the woman who has never lactated, but it is not so clear whether cancer is more apt to develop during year and a half of pregnancy and lactation than it is during the same length of time at the same age when the breast function is dormant.

Of forty-five patients traced for five years or longer after operation six (13 per cent) were well when last heard from. This percentage of five-year cures is not as high as the percentage of cures in unselected cases of breast cancer generally but indicates, as cancer statistics go, a far from hopeless prognosis for malignant disease arising in connection with breast activity. C. H. D. vs. M.D.

McAulley F. P., and Dieckmann, W. J. Hemorrhagic Lesions of the Placenta and Their Relation to White Infarct Formation. *Am J Obst & Gynec* 9:3, 55.

In an examination of 330 placentae, four or near four times the authors are struck with the frequency of hemorrhagic lesions, which were noted in 23 cases (38 per cent).

On the basis of this study they draw the following conclusions:

At least some of the usual white infarcts resulting from changes in the villi may at first be red in color as described by Young. These, the term red infarct is applicable.

The other lesions, to which various terms have been applied should not be called red infarcts because they are not infarcts, being collections of blood to which the term hematoma or hepatization is applicable, depending on whether they are circumscribed or diffuse. They have a common etiology.

3. As pointed out by Young, the maternal blood is of primary importance in nourishing the villi.

4. Collections of blood in the placenta may be the beginning of white infarcts. This blood itself may be changed into white infarct which in the gross does not differ from any other of the collections may cause infarction of the surrounding villi by interfering with the maternal circulation.

5. There can be white infarct formation without endarteritis in the fetal vessels. Whether this is true of all infarcts it is impossible to say at the present time. F. L. CONNELL, M.D.

Cotta, G. The Etiology and Treatment of Tubal Pregnancy (*Sur l'Étiologie et le traitement des grossesses tubaires*). *Lyon chir* 9: 217, 665.

The author's patient had a normal pregnancy when she was 27 years old. Three years later she was operated upon for what was thought to be acute appendicitis but found to be an extra-uterine pregnancy. The illness reported in this article suggested a second tubal pregnancy but this was ruled out. A diagnosis of salpingitis was made and vaccine treatment given. Several days later the patient passed a large amount of black blood by

rectum which undoubtedly was from a hematocele opening spontaneously. About six weeks later a hematocele of the size of a mandarin orange was removed by operation. Recovery followed.

Extra-uterine pregnancy with hematocele opening spontaneously into the vagina or rectum is a rare condition today because operation is usually performed before this stage is reached.

Cotta suggests that as women who have had one tubal pregnancy are apt to have another it might be well to perform hysterectomy or remove the opposite tube at the time of the first ectopic gestation. If the other tube shows severe inflammation there is no question as to this indication but in the case in which the remaining tube was apparently normal Cotta did a salpingostomy.

It has not been proved that the cause of tubal pregnancy is congenital malformation.

On the basis of the literature and nineteen cases of his own, Cotta believes that in tubal pregnancy the treatment should be salpingectomy. Salpingostomy alone without removal of the ovary and that in certain number of cases the gravid tube may be saved. If the tubal portion has been complete and the pavilion remains permeable it is probable that the swollen tube will regain its normal size and again fulfill its function.

W. A. BRENNAN

Moody, W. B. Bacteriology of Fetal Systemic Infections Following Miscarriage or Abortion. *Am J Obst & G* 9:3, 78.

In twenty-four of twenty-eight cases studied, some organism appeared in several of the fluids. Thus beta streptococci were isolated from more than one place in thirteen pneumococcus bacillus coli and staphylococcus in three each and bacillus in cosmes and alpha streptococcus in one each. Cultures were made during life from the blood of five patients. In only one were any organisms found; these were beta streptococci. In these cases there was thrombo-embolic endocarditis. The hemolytic streptococci isolated in all instances proved to be of the beta type. All fermented lactose and salicin but not mannite or inulin. Efforts to determine specific strain by gelatin tests failed. Agglutination of suspensions of these strains by serum from rabbits injected with strains of hemolytic streptococcus from several sources such as cases of scarlet fever, erysipelas, infected tonsils, and sepsis due to abortion, failed to show any specific characteristic group.

Although it was noticed at autopsy that as a rule the alterations consisted of peritonitis or thrombophlebitis varying in location, degree and sequence—also that these two types of alterations were rarely combined—no differences in the bacteriology corresponding to the two types of alterations was definitely established.

Statements, particularly negative statements made by women who have had criminal or self-induced abortion are entirely unreliable. Admit

sginal septum who became pregnant in the left uterus soon after marriage, miscarried it two months, became pregnant in the right uterus about four months later and was delivered at term by cesarean section of a female infant weighing 5 lbs 10 oz. At operation two distinct terri joined only at the cervical portion were found. Connected with the lateral side of each uterus as an apparently normal tube with a normal artery. The consultant who performed the cesarean section sterilized the patient by resecting the tubes but the reason for this is not stated. C. H. D. is M.D.

Greenhill, J. P. "Once Cesarean Section Allways Cesarean Section is Untruth" *Am J Obst & Gynec* 9:3 86

Four cases are reported in which cesarean section had been performed at the first pregnancy. It was noted that in every instance the baby born through the vaginal route weighed more than the baby delivered by cesarean section. One patient was delivered by forceps (prophylactic) and three by birth spontaneous. In the cases in which the classic cesarean section had been done, relatively thin scars as found hereinafter in the patient on whom the low cervical operation had been performed, no trace of the scar was palpable. In the three cesarean sections performed at the Chicago Lying in Hospital caugut was used in closing the uterus.

It appears from this report that use of the modern methods of performing cesarean section the ductum once cesarean sectionally, cesarean section is untenable.

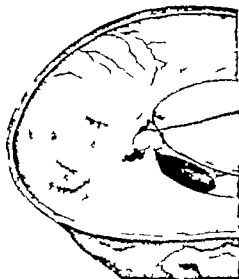
I. I. C. M. M.D.

NEW BORN

Holland E. "Craniat Stress to the Fetus During Labor and the Effect of Excessive Stress on the Intracranial Content" *J. Ob. & Gynec Brit Emp* 12:55

During making of the head labor the cerebral septa tend to restrict the change in the pericranial limits. Compression hinders the antero-posterior diameter, the middle portion of the forehead of the fetal cerebrum, the tentorium cerebelli are stretched and torn. When the vertex to base diameter is short, not only of the brow presentation, the free border of the tentorium is at the lower third of the falx, retracted back, and the rest of the falx is slack. A thickening in the special thickened portion of the septum along their attachment to the pericranium and then free borders, the tearing of the falx or the tentorium might be associated with subdural or dural hemorrhage. Of 6 fresh fetuses examined the tentorium cerebelli found torn in eight cases. In the case of the fetus in the first birth, the tentorium was not torn, but hemorrhage occurred.

Forty-four of these cases the presentation cephalic, and in thirty-five breech presentation. Of the forty-six cephalic presentation, forty-four



A complete bilateral tear of the tentorium cerebelli. On the right side the tentorial band has been torn through, on the left side the tentorial border of the band remains intact.

presentations, brow presentation, forty-two of the cases of breech presentation, forceps were used, and in nineteen delivery was spontaneous. In some of the cases of breech presentation, necessary some of the deliveries were difficult.

R. J. Carrigan M.D.

McDonald A. I. "Repeated Dystocia from Fetal Anomaly in Successful Pregnancies" *Am J Obst & Gynec* 1:9

The patient, born 1893, was first delivered in the seventh month of pregnancy. The child presented by the breech. The fetal abdomen was markedly distended by several quart of fluid. Upon release of the fluid the child was delivered dead.

The baby was stillborn. Its length was 15 cm, head small and of the brachycephalic type and its thorax well formed. The abdomen had been apparently greatly distended and its walls were thin. The lower part of the abdominal cavity and pelvis were somewhat mutilated in the extraction. The cranial growths were so mutilated that it was impossible to determine the sex of the child. The legs were well formed but the feet were clubbed and the foot had six toes. The hands were normal except that there were six digits, and one of these on the right was double (fused).

The heart of normal size but located in the left hypochondrium, near also the gall bladder and duct, the esophagus and the appendix. The small and large intestines were apparently normal structure. The sigmoid and rectum were on the

right side. In the lower abdomen a large mass extended from the xiphoid to the umbilicus. The kidneys are normal in location and position. The ureters are enlarged and entered the mass described. When opened this mass proved to be the bladder with thickened wall. The catheter could be followed along the ureters where there is a large patent stricture. On each side of the small structures apparently the ovary and tube are found. A hysterectomy could be demonstrated. Examination of the thorax demonstrated pulmonary complete atelectasis. The placenta was normal in gross structure. Section showed the villi to be normal or only slightly thickened.

On July 19, 1918, the woman delivered spontaneously of a full-term overterm fetus which presented exactly the same anomalies as the first. (L. J. Conner, M.D.)

Crothers, R. L. Injury of the Spinal Cord in Breech Extraction as a Cause of Infantile Death and of Paraplegia in Childhood. *The J. N. A. M.* 1918, 9: 1-10.

The author states that lesions of the spinal cord due to breech extraction are being discovered by the pathologist. Direct suprapubic pressure upon the head by assistants during extraction or the unduly early of the breech extraction is important factors in the production of intractable high and low lesions.

Five cases are reported in which paraplegia developed postnatally. In all cases apparently in breech extraction. Four of these showed definite evidence of practically complete transection.

The author draws the following conclusions: 1. High cervical transection is probably all that is taken account of the prognosis of the lesions of the phrenic nerves and the medulla.

Transection below the fetal level if accompanied by sufficient hemorrhage to destroy the cells of the lower segment results in anastomosis and permanent flaccid paralysis below the lesion.

Examinations of the few segments and not of all of the lumbar enlargement result in erroneous conclusions. First, the flaccid paralysis and the few lesions of the sacral segments of the fetus corresponding to the destroyed cells of the lower horn and below the zone of reflex activity of distinct type during this stage the bladder and rectum become autonomous. (On theoretical grounds it seems probable that this stage of reflex activity lasts only so long as reflex selection is permitted.)

It is admitted that the vast majority of obstetrical spinal cord injuries are caused by improper extraction in breech extraction.

From a theoretical consideration of the forces at work in traction it seems justifiable to suggest that traction on the cord when combined with suprapubic pressure or uterine contractions on the head may cause collapse or death from herniation of the medulla through the foramen magnum.

6. If this possibility can be proved by laboratory or clinical studies it will be proper to challenge the statement, now almost universally accepted, that asphyxia is the only important cause of fetal death in breech extraction. (H. B. Sturges, M.D.)

Bacon, C. S. Some Obstetrical Problems Involved in Stillbirths and Deaths of Newborn Infants. *J. Iowa Med. Soc.* 1918, 9: 1-10.

The number of stillbirths in the United States is about 4 per cent of the number of births, and the number of deaths in the first week of life about 1.5 per cent of the number of births. In other words it is estimated that there are about 100,000 stillbirths in the United States every year and about 87,000 deaths of infants less than 6 weeks old. It follows there are 100 stillbirths and 100 infant deaths.

The cost of a child at birth is much greater today than it was twenty or thirty years ago. Comparing the time lost by the mother at current wage rates and considering the expenditures for nursing and medical attention it is estimated that the cost of a baby is a family of a great many times as high. With the decline in the birth rate and death rate and with a 1 per cent increase in the expectation of life, the birth rate from forty-six to fifty-one years has increased considerably more than they were twenty years ago and responsibility for their safe delivery is correspondingly increased.

Fetal deaths may occur antepartum or intrapartum. The most important causes of antepartum death are placental and uterine injuries to the placenta. The majority of intrapartum fetal deaths are due to disturbances of placental circulation caused by excessive contraction of the uterus or separation of the placenta. A few are due to asphyxia of the cord. Some result from injuries to the brain and spinal cord and perhaps from poisoning by analgesics or anesthetics.

On account of the great importance of uterine contraction in causing stillbirths labor should be started carefully, especially during the second stage. Probably one-fourth of all stillbirths and one-fourth of all deaths occurring during the first week of life could be prevented by proper management of labor terminating in artificial delivery of the fetus before the control of uterine contractions prompt interference when indicated and the removal of all unnecessary and improper operations.

Excessive contractions of the uterus may be postponed by reaction to obstructed labor or may be caused by the use of syntonin or ergometrin. The author has known several infant deaths which at first were due to improper use of pituitary extract. It reports that he has never lost a child from the use of morphine and scopolamine an algorithm during the first stage of labor. Neither has there been any fetal deaths in his cases which could be attributed to the use of either of nitrous oxide and oxygen. (C. H. D. M.D.)

Groves, W. R. Hemorrhage in the Newly Born.
Med J Australia 9: 4, 76

The author reports a case of hemorrhage from the navel and penis of a newborn infant which could not be stopped by ligation or local applications. After forty-eight hours the child's condition was so grave that the injection of 9 c.c.m. of the father's blood into the longitudinal sinus was done. The oozing then promptly ceased. The technique used is described as follows:

Sterilize two syringes (one with capacity of 1 c.c.m.) which have interchangeable needles. The latter must be stout (about the thickness of an average-sized safety pin at least). A warm sterile saline solution and a 2 per cent sodium citrate solution are necessary. For the latter a solution of sodium citrate tablets in sterile water may be used without further sterilization. Take up 1 c.c.m. of this citrate solution in the 1 c.c.m. syringe and an unmeasured quantity in the second syringe, and place both in warm saline or preferably citrate solution in a sterile dish (in the latter case no saline solution need be prepared). Into the 10 c.c.m. syringe take up 9 c.c.m. of blood from the vein of the donor. Thus gives dilution of a little over 10 per cent. Disconnect the needle and lay the syringe in the

warm sterile citrate solution. Then place the baby on its back across a table, with the occiput resting at the edge. The head should be steadied during the operation by a nurse leaning across the child's body and placing her hands at the sides of the head. Sterilize the area about the anterior fontanelle (shaving is not necessary) and define the posterior angle of the fontanelle with the left forefinger. Insert the needle of the second syringe exactly in the midline and direct it obliquely downward and forward at the spot located by the left forefinger. After it passes through the scalp second and very appreciable resistance will be felt. In overcoming this the needle slips into the sinus the entry being signalled by a thin stream of blood mixing with the citrate solution in the barrel of the syringe. Care is necessary to keep the needle from moving. Disconnect the barrel of the syringe, replace it by the 10 c.c.m. syringe and very slowly deliver the citrated blood into the sinus. Unless the needles are of large gauge, an appreciable amount of force will be necessary to empty the syringe, but as long as the baby's head and the syringe have not been moved, the surgeon can be sure that the needle is still in the sinus and can inject with confidence.

C. H. D. via, M.D.

GENITOURINARY SURGERY

ADRENAL, KIDNEY AND URETER

Stevens, W. F. Malignant Tumors of the Supra-renal Gland. *J. Am. Med. Assn.* 1911.

Stevens report the case of a boy 7 years of age who died from hypernephroma, twenty months after the beginning of symptoms. There seemed to be definite relationship between the development of the tumor and the massive and profuse hematuria from the left upper quadrant of the abdomen, hours after the lifting of a heavy trunk. Operation revealed a retroperitoneal fibrosarcoma. Subsequently the patient recurred in the groin of the left kidney became tender and in the course of a few days in front of the ribs. The left precaval node was enlarged. In a previous report the

mouth did not appear from the left ret-
ro-entern mouth. The left complained of
hilly sensation in pit and about interest in
and cringe. I lay by bed low as by presentation
of the face a faint diffuse mottling over the entire
head.

The author even admits that the first
impression was wrong. The first
of eight out of ten dishes I picked from
the menu was not what I expected.

14 In point was the summer but I much
wore then in the shoe case

The only hope of recovery lay in the
discovery of the tumor before it
occurred. For years, and throughout
the 1950s, the only hope was that

RF R₁ MR

Harrison, G. A. & Lawrence R. D. Dose and
the Blood and Urine as Measure of Renal
Efficiency. *Lancet* 6

The incorporation of variables has been used as a test of predictive validity. Complicated few in categories have been examined the likelihood of even fewer determined the bias for blue and nine dimensions.

The thorn found east in the of distance in both the blood and the urine of live the on firm tissue of other renal diseases test and it that red or chocolate or pink color in them as do on the urine turn.

The conclusions are summarized with
follows:

It is mm total. better a m or plasma is used for the extra turn of blood in law.

The concentration of the sodium hydroxide remains constant throughout the test.

3. Norms by the place for the blood in 100 ml units

It is necessary to demonstrate retention of
his test in the field before concluding the decrease
of the hazard is probable for the decrease in the
retention of the formation.

5. This case estimate has been found useful in the diagnosis of other renal tubular tests, but only in very rare cases. (Lippincott, 1951)

Sutton M G The Action of Hexamethylene
Tetramine *Med J Australia* 1971; 1: 1

The following table shows the results of the method of spot metering with hexamethylenes.

[illegible]

The effect of hormone is due to the fact that a female rat put up with a high level of prolactin. The normal secretory rate of prolactin is 100 ng/ml. A rat with a prolactin level of 1000 ng/ml will produce a milk that is 10 times as rich as normal. The prolactin level is controlled by the hypothalamus. The hypothalamus secretes a hormone called prolactin releasing hormone (PRH) which stimulates the pituitary to secrete prolactin. The hypothalamus also secretes a hormone called prolactin inhibiting hormone (PIH) which inhibits the pituitary from secreting prolactin. The balance of these two hormones determines the level of prolactin in the blood.

A 1000 µl drop of formalin will inhibit the growth of the bacteria in that medium. There is no effect on higher than the bacteria are not affected.

All lies comb it is low but not inhibits the growth of bacteria decomposition. All lies may be given before the time it is not like the gastric important from the food in phosphorus demand. It is given that it is not given before the time it is

He has a little of the stomach and the skin
 white like the urine. I think should be treated.
 If these books are of any use for
 persons who have a cold and have an ailment
 there is and if it is of doubtful use in a case
 where it is of the same kind. (1) For a cold

Publication 4 (The Great Mural) of Great &

The theory is now the exact opposite
 name of the real world. The theory of
 science is now the real world of persons. The
 real world is now the theory of persons.
 Under the name of the theory of persons
 the theory of persons is now the theory of persons.

The purpose of this article is to establish the importance of diminished specific gravity of the urine from one kidney as a sign of disease of that kidney or disturbance of its function. The author's observations are based on 449 cases. In this series there are 7 patients in whom all the evidence of careful cystoscopic examination reveals renal origin of their complaint. Five of the 7 cases the specific gravity is equal to the other sides. The remaining six are noted out as the author believes that in these cases there had been a previous kidney disorder. The specific gravity was equal on the two sides also in ten cases of bilateral nephritis and in ten out of twenty-six cases of bilateral pyelitis. In the remaining cases the severity of the condition shown by the amount of pus and albumin was greater on the side of the lower specific gravity.

These facts show that difference in specific gravity on the two sides indicates some bilateral condition on one side or both kidneys are diseased, as inequality in the extent of the involvement on the two sides. A lowered specific gravity is found on the affected side in cases of renal calculus, tuberculosis of the kidney, tumor of the kidney, lateral pyelitis, hydronephrosis, polycystic disease of the kidney, movable kidney, renal colic, renal infarct, gunshot wounds of the kidney, and certain cases of symptomatic renal hematoma.

H. W. PIERCE, M.D.

Lowley O. S. and Muller H. R. An Experimental Study of Various Chemicals Used in Pyelography. *J. Urol.* 9:3, 12.

The authors confirm the work of Wendrath who found that injecting a material into the kidney pelvis under pressure sufficient to cause overdistention is a dangerous procedure leading to an inflammatory reaction in the kidney, pulmonary embolism, edema, and death. They note that 40 per cent ammonium bromide and 20 per cent sodium iodide cast as deep shadows as barium which is in suspension, and that potassium iodide gives the most distinct shadow. Of 11 sodium iodide is as opaque as sodium bromide or 10 per cent thorium nitrate solution less toxic than either of the other two, less hypertonic and therefore less harmful. It is now used in 20 per cent solution.

Pyelography is indicated to ascertain the extent of damage of the pelvis, the degree of dilatation, the exact location of stones and the presence of hydronephrosis, malignant growths, malformations, strictures or anomalies.

The principal contraindications are subacute infection, debility of the kidney, old age, and great calcareousness.

The authors insert lead catheters through cystoscope, take specimens for laboratory examination and make the fluoroscopic tests first. They then make roentgenograms of the upper and lower tracts. Sodium iodide solution is then injected and new roentgenograms are made. A fifth roentgenogram is made with the patient in the erect position, the

catheters having been withdrawn, the renal pelvises and sodium iodide injected during their withdrawal. The sodium iodide is drawn off by remarking the catheters. For cystograms silver iodide emulsion has been found a satisfactory medium. Both kidneys may be examined at once by this method. B. F. ROSS, M.D.

Quimby W. C. Perirenal Insufflation of Oxygen. *J. Urol.* 9:3, 12, 13.

The most reliable of recent reports are not enthusiastic regarding the perirenal insufflation of oxygen and the author finds that this procedure does not give pictures of any great value. The thoracoscopic plates made over the Buck diaphragm. He believes there is little danger of mediastinal emphysema and penetration of the bowel if the operator has even ordinary judgment and knowledge of anatomy. Quimby used oxygen collected in a sterile liter flask connected with a liter flask of sterile water and lumbar puncture needle marked in centimeters. The patient was placed on his side and after the induction of local anesthesia the needle was inserted into the loin pointing posteriorly and inserted the lower pole of the kidney through the perirenal fascia but not into the kidney to a depth of 1 centimeter according to the patient. When the needle was positioned the water flask was inverted. At a level of 10 ft the water will displace the oxygen with moderate pressure. The best results were obtained by injecting the kidney pelvis and making a 15-20 minute exposure from 1 to 14 fourteen hours after the gas insufflation.

Dense adhesions about the kidney such as follow operation are definite contraindications to the insufflation of gas. B. I. ROSS, M.D.

Braasch W. F. Renal Torsion. *J. Urol.* 9:3, 12, 13.

At times the course of pyelography abdominal exploration or crop may reveal deviation from the normal in the relative position of the renal pelvis and calices is found. The pelvis may lie anterior to the calices or the normal relations may be reversed so that the calices are medial to the laterally lying pelvis. This may be due to an arrest of the renal mass in its progress posteriorly while the pelvis is still anterior and before complete rotation has occurred. Renal torsion may be caused also by other than congenital factors such as acquired renal ptosis resulting from various factors. Floating kidney being the most common. The long axis is often changed from the normal vertical so that the pelvis extends horizontally. Another responsible factor is displacement of the kidney by external pressure. This may be produced by an extrarenal tumor, perinephritis and spinal deformity. In such cases the kidney may be markedly displaced. It is not unusual to find it over the vertebrae under the tenth or eleventh rib or in the bony pelvis. Intrarenal tumors may cause torsion through displacement by encroaching on the pelvis. Renal rotation may result also from perinephritis and subsequent cyst

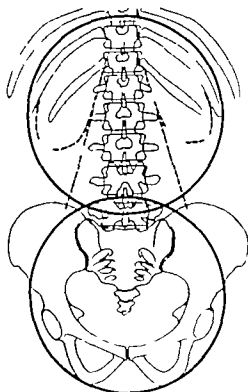


Fig. 2 Areas to be included in roentgenogram of the urinary tract. The upper exposure should always show the last twelve ribs on each side, the bodies and transverse processes of the last two dorsal and first four lumbar vertebrae, the shadow of at least the lower two-thirds of the kidney, and the markings of the psoas muscle. The lower picture is taken in such a way as to overlap somewhat the upper one and includes the entire pelvis and the last lumbar vertebra.

Pyelography and ureterography are often indispensable in the diagnosis of this condition when the plain ray study alone gives doubtful findings.

Encrinate reviews the classical symptoms of calculus in the kidney and then points out how they may mislead. Other kidney conditions frequently cause exactly the same symptoms. The diagnosis of renal calculi should never be made hurriedly from the symptoms alone.

Congenital anomalies are responsible for many problems in the diagnosis. In such cases also the plain ray study combined with opaque injections is frequently of great value.

Operative intervention may or may not be urgent. It is urgent in cases of calculus anuria and calculus blocks. While some cases of this type can be relieved by ureteral catheterization one should not wait longer than forty-eight hours for relief of the anuria. If then the stone cannot be located by operation, nephrotomy or pyelotomy should be done immediately.

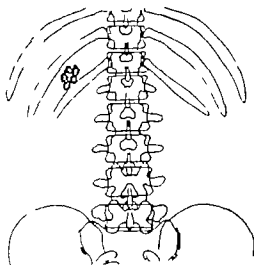


Fig. 3 Multiple gall-stone shadow. Not the characteristic faceted shadows, each one of which has dark periphery and lighter center.

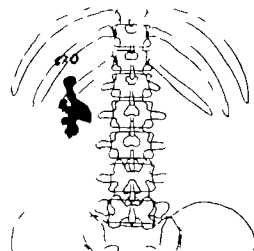


Fig. 4 Tracing of X-ray from case showing simultaneous presence of branching or coral-like calculus in the right kidney and gall-stones.

mediate removal of the stone being delayed for a later time. The tendency towards conservation of an organ which still retains some functioning parenchyma is one of the important advances in modern urology. In the majority of cases if renal stone operation is not urgent.

The author discusses the problems met with in cases of unilateral and bilateral calculi. For the removal of kidney stones he advocates pyelotomy in preference to nephrotomy. Recently the field of

age of 55 years, but are found from childhood to advanced life. The time from the appearance of the first symptom to the recognition of the growth varies from a few weeks to three years. The tumor may be the only sign.

In the diagnosis of renal tumors the three considerations three cardinal symptoms: hematuria, tumor, and pain. He gives points in the differential diagnosis and states that ureteral catheterization, functional tests, and pyelograms refer to H reports to cases of papillary carcinoma. One patient recovered but the other developed recurrence and is now receiving deep X-ray treatment. H reports also case of fibrosarcoma with dense adhesions of the caecum. H L Gross, M.D.

Rehn E. and Roettger F. The Cause and Prevention of Secondary Hemorrhages After Nephrectomy (Ueber Ursache und Verhütung der Nachblutungen nach Nephrotomie) *Zuckerf. u. Ch.* 9, 2, 350.

The statement made by Barth that every division of an arterial branch leads to the death of tissue (the formation of an infarct) still holds good today. Therefore the discovery that the renal artery stems from the ventral and dorsal halves of the kidney are independent of each other was of great importance. I mean the plane of division found by Zondek lies somewhat posterior to the center. Accordingly the loss of considerable mass of parenchyma may be avoided by the proper placing of incisions. Marwedel splits the kidney by a transverse incision.

Secondary hemorrhage may follow nephrectomy immediately after period of few days. The authors opine the early hemorrhages are due to poor operative technique and can be prevented by careful suturing of the parenchyma.

Some time ago Rehn called attention to the possibility that circulatory disturbances in the split kidney may be the cause of the frequently fatal secondary hemorrhage. As nephrectomy has an unfavorable effect on the delicate coordinated function of the kidney he directed his attention particularly to the physiological fixation of the split kidney to prevent kinking of the renal pedicle and choking of the venous and to insure patency of the renal pelvis and the ureter.

His theories were tested by the nephrotomies performed at the Freiburg clinic during the last two years. In case of unfixed and maldrained kidneys fatal secondary hemorrhage occurred. In ten cases bleeding resulted without hemorrhage and without the formation of urinary fistula but in one case bleeding occurred because the catheter was removed too early and in another case urinary fistula developed because the ureteral catheter was left in place too long (fourteen days).

While secondary hemorrhage does not occur in all cases of poorly fixed kidney it is a complication in a number of cases, and the kinking of the veins is an important factor.

Stasis of the urine leads to hyperemia and bleeding in the parenchyma of the kidney which is split or in the first stages of healing. This may be prevented. Koemmel suggested by introducing ureteral catheter through or into the bladder by way of the nephrotomy wound. If stasis of the urine occurs in the presence of undisturbed supply of blood as the result of kinking or obstruction of the ureter a secondary hemorrhage may develop even after the renal wound is more firmly healed. If the wound gives way a urinary fistula will develop and thus eliminate the danger of secondary hemorrhage.

The following precautions are necessary for the prevention of the complication mentioned: (1) proper placing of the incision (Zondek or Marwedel) accurate coaptation and careful suturing (2) measures to prevent stasis of the urine and (3) fixation of the kidney in its physiological position.

The technique recommended by the authors is: thick ureteral catheter is pushed through the renal wound into the renal pelvis and through the ureter into the bladder and its free end fixed. This catheter is removed between the sixth and tenth days. The kidney is carefully sutured up to the opening for drainage. A pyelitis thick rubber drain may be pushed over the catheter into the renal pelvis. The renal fixation is done in such manner that the kidney decapsulated at its lower pole is brought back into the normal position and pushed forward until its lower border is parallel with the costal arch. A large needle threaded with heavy silk is then inserted at the lower border of the twelfth rib through the lower pole of the kidney, and brought out at the upper border of the twelfth rib. The thread is left in place for fourteen days.

RORDELL (Z)

Leguen. The Immediate Result of Nephrectomy *Urol. Press.* 9, 3, 271.

In considering the advisability of nephrectomy three factors must be taken into account viz. the renal factor, the surgical factor, and the presence of tuberculosis.

In testing renal function Leguen relies on Amhard constant. He states that when there is constant of better nephrectomy will be safe. All the other tests of renal function are only relative. After nephrectomy, from about 5 c.c.m. of urine are usually passed during the first three or four days, the quantity then gradually increasing. If it does not increase glucose solution is given per rectum or under the skin.

With regard to the technique of nephrectomy Leguen states that he uses no drainage and fills the wound with glucose solution.

In cases of tuberculosis there is usually temperature of 39 degrees C. after the operation but this continues only for a day or two. After an operation there may be generalization of the disease to the pleura, peritoneum, meninges, or bones.

V. D. LIPPINCOTT, M.D.

BLADDER URETHRA, AND PENIS

Leopoldant C. A Case of Mixed Tumor Epithelioma-carcinoma of the Bladder of Probably Adenoid Origin (For cas de tumeur mixte-epithelioma-carcinome d'origine probable adenoides) *J. d'ur. et de bl.* 1908 9

In a woman 55 years of age Leopoldant found impalpable tumor at the summit of the bladder which in most respect differed from neoplasms commonly found in the bladder. It had (almost) exactly similar case in the literature though there are few but somewhat resemble it. There is a tumor pressing bladder down. The tumor was diagnosed as a uterine adenoma. A year later it was found to be the size of a child's head and it was only the weight of the bladder but not the tumor. It was removed by resecting the tumor of the bladder. The patient made a recovery.

Histologic examination of the tumor showed it to be a mixed tumor epithelioma-carcinoma. The nests of neoplasms were in the bladder. Leopoldant reported the only proved case of epithelioma-carcinoma of the bladder reported in the literature by Krompacher 1908.

Leopoldant believes that the upper pole of the bladder there may be peritoneal carcinoma-cysts originating from the allantoic sac and that certain tumors of the summit of the bladder may be due to proliferation of such cysts. When the tumor was the first to descend bladder it may be allantoic type reported by cases. It remains also described an epithelial tumor of the bladder which he considered of blastoid origin, but his description was very brief. Leopoldant has obtained detailed description of the tumor which begins with a nodule.

If the hypothesis regarding the pathogenesis of the tumors of the case reported by Hartmann and in the author's case is correct it must be concluded that the embryonic debris of the upper pole of the bladder (that of the urorhynchial region) may give origin to pure epithelial tumors (in Hartmann's case) or to epithelioma-conjunctive tumors (in the author's case). There are not true local tumors any more than mixed tumors of the prostate, true prostatic tumors. They are rather just visceral tumors, this explains their eccentric development and the absence of bladder symptoms.

W. A. B. R.

Parker W. B. Bladder Neck Obstructions. Their Surgical Relief. Reference to the Young Perineal Surg. *Gynec. & Obst.* 9 1 1912 10

The author states that while the various phases of bladder neck obstruction are common the pathological physiology of the musculature with regard to increased tone spasm and rigidity, and retention has not been satisfactorily explained on the basis of the symptoms and the pathology found at operation or at the time of diagnosis. The bladder neck and its muscle fibers are seldom primarily at fault in these disturbances.

Long continued pressure of the bladder neck and surely culminate in pathologic changes such as hypertrophy, proliferation of fibrous tissue and reduction of resiliency.

The most common factors in the production of bladder neck obstructions other than prostatic disease are postinflammatory changes in the urethra following posterior urethritis and cystitis. These conditions at the onset are asymptomatic but have a characteristic set of symptoms such as intermittent urethral discharge which infecting organisms and mucus discharges, the voiding reflex with increased frequency of voiding, even marked impotence and occasional leakage at the end of micturition. Parker states that his attention has been paid to contractures of the bladder neck, stricture or about prostatic hypertrophy and that in the face of existing incontinence very prolonged has refused to attack the prostate in its location even when the bladder was open and the changes could be seen and felt. Parker operates Young perineal has given brilliant results in relieving the inflammatory disease not only as shown upon the floor but around the entire urethral vesical ring.

Postoperative contraction is another type of obstruction which may occur after enucleation of the prostate by either route.

The various modifications of the Young perineal retractor and their respective merits are discussed in detail.

The author concludes that in many cases of obstruction of the neck of the bladder the cure is not only local infection but also remote local and systemic treatment. The Maceo an modification of Young technique he regards as the best method for most cases of this character and the modified Young perineal or median bar suture the most efficient and safe instrument for the surgical relief of urethral strictures.

The mortality rate has been practically abolished and hemorrhage does not occur. The preparation of the patient is of the greatest importance.

J. S. JAMES, M.D.

Flissom, L. Associated Closed Traumatic Rupture of the Posterior Urethra and Bladder (Combination à l'écart des ruptures traumatiques de l'urètre postérieur et de la vessie) *J. urol.* 1912, 335

Concomitant ruptures of the posterior urethra and the bladder with critical displacement of the symphysis pubis are rare. Flissom reports such a case in a man who was thrown from his horse. The symptoms suggested rupture of the bladder with pelvic fracture.

A suprapubic incision disclosed critical displacement of the pubes and rupture of the neck of the bladder. The tear was situated so low and the retroperitoneal region as so contained that bladder suture was not attempted. A hypogastric drain was inserted and the space of Retzius tamponed.

Several days later an attempt at catheterization revealed rupture of the posterior urethra not recognized at the first examination. Suture of this rupture was delayed for several months to await the closure of the space of Retzius and the establishment of the hypogastric meatus. The patient left the hospital in excellent condition.

In the literature Phoson found only three other cases of simultaneous rupture of the bladder and urethra following pelvic injury not opening the superficial tissues, and these were not exactly the same as the case reported in this article.

With regard to the surgical treatment the author states that the method of choice consists in suture of the urethra and suprapubic drainage of the urine. When suture of the urethra is impossible, the treatment indicated is suture of the bladder perineal drainage of the urine by means of a retention catheter and subsequent repair of the urethra by the method of Pasternak and Iacini. If neither the bladder nor the urethra can be sutured, suprapubic drainage of the bladder and drainage of the posterior urethra through the perineum should be instituted at the primary operation and the urethra repaired by the Pasternak and Iacini method at a second operation later on.

The same result can be obtained more rapidly by opening the perineum and the bladder, catheterizing the urethra either by the meatus or by the retrograde route, leaving the urethra to cicatrize over the sound left in situ and allowing the suprapubic opening to close secondarily after urethropneumal cicatrization.

W. A. BAKER.

Schuller H. Regeneration of Resected Urinary Bladders in Rabbits. *J. f. U. u. G. u. Obs.* 9, 3, xxvi, 24.

Regeneration is usually defined as the reformation of lost part or parts of a morphological unit, or the new formation of lost cells from cells of the surrounding tissue. It is the replacement of lost part by a newly-formed part corresponding in form, structure, and size.

There are two forms of regeneration: the physiological, such, for example, as the constant reformation of epithelial cells, hair, blood cells, etc., and the reparative, which we see as a sequel to loss of tissue substance following trauma. Closely related to regeneration is the process of compensatory hypertrophy observed in the glandular organs of vertebrates (kidneys, ovaries, etc.).

The author's experiments with regard to regeneration of the bladder were performed on rabbits under 6 months of age. The bladder was extirpated down to the ureteral orifices and anteriorly, close to the urethra. The cavity left, as scarcely large enough to hold $\frac{1}{2}$ cm. of fluid. Of the nine animals, only two were lost through infection. Within eight months the size of the newly formed bladder in the cases successfully operated upon was within one-third the size of the normal bladder. No changes in the ureters or pelvis of the kidneys could be found.

The histologic findings indicated that these reformed bladders were the result of true regenerative process. The muscle fibers and the muscle bundles in the new-formed wall were slender where as in hypertrophic and hyperplastic conditions the contrary would be expected. Hyperplasia no doubt takes place shortly after the resection but regeneration sets in soon.

H. W. LANGMEYER, M.D.

GENITAL ORGANS

Sand, K. Ligation of the Vessels (Epididymectomy) by Steinach. Method as a Means of Rejuvenation in Old Age and in Other Conditions such as Impotence and Depression (Vasoligatur—Epididymektomie—nach Steinach angewandt als Verjüngungsmittel bei Greisenthum und anderen Zuständen wie Impotenz und Depression). *Leipz. f. Lager* 9, lxviii, 597, 50.

Six months ago Sand performed on dogs his first experiments on resection of the epididymis. He is now able to report that the results have been lasting as well as brilliant. The first similar operation on man he performed in September, 1920. The effect of the operation cannot be regarded as true rejuvenation. The phenomena of old age are merely somewhat retarded by the processes set up by the vasoligation.

In this article the author reports fifteen cases.

Attention is called to the difficulty in judging the results of such an operation and the importance of collecting a large number of cases on which to base our conclusions. In every case the author carefully explained the problem to the patient and made it clear that the operation was still in its experimental stage and that its certain result was sterility. In order to exclude suggestion he had the patients write up their own case records. The condition of the patient was recorded very carefully and his weight, blood pressure, and dynamometer readings were given.

The technique of the operation is of particular importance. Sand was not content with simple vasectomy even to the cauda, always performing an epididymectomy. This must be done with the greatest caution. Several centimeters of the epididymis, high up on the caput, should be exposed with small instruments with care to spare the blood vessels and nerves for the nourishment of the testicle. After exposure, Kocher clamps are applied at the upper and lower limits of the area to be resected. Both stumps are cauterized with Paquelin cautery to insure cicatrization. The tunica propria is closed with penetrating suture.

The case histories are given in full. From these it is seen that the patients suffered no harm from the operation and were pleased with the result. There was wide variation as to the time of the appearance of the reaction. In this connection it must be remembered that there is an extraordinary difference in the condition of the tissues of the body especially in older persons, in many of whom they

The second stage—the prostatectomy—is done when the patient has become good surgical risk few weeks to a few months later.

The enucleation of the prostate is performed under gas anesthesia; ether is rarely used. Either smothering is not contraindicated if it is just sufficient to cause relaxation and brief and if the patient's general condition warrants its use.

The prostate is enucleated by rupturing into the roof of the prostatic urethra, finding a line of cleavage, and sheeling the prostate out assisted by two fingers in the rectum. After its removal no tube is placed in the bladder. The wound is covered with a sterile dressing.

A routine to lessen hemorrhage has been the administration of horse serum subcutaneously and 20 gr. of calcium lactate by mouth every two hours before and after the operation.

A nurse is detailed to the case to remove blood clots and change the dressings whenever necessary. After three or four days the bladder is irrigated daily through the suprapubic sinus. After a week or ten days irrigation may be done by catheter through the urethra. Acid sodium phosphate and plenty of water are given. The wound is kept clean by frequent dressings and stimulation. At the end of two or three weeks sounds may be passed.

C. R. O'CONNOR, M.D.

Barney, J. D., and Shedd, W. M. A Study of Anesthesia in Prostatectomy. *Surg. Clin. N. Am.* 9, 12, 1913.

The authors have undertaken a study of 50 patients operated upon for different types of obstructing prostate. The average age was between 60 and 63 years. The youngest was 44 and the oldest 83. The blood pressure was 50+ systolic and 84+ diastolic. There were 5 anesthetics: spinal, nitrous oxide-oxygen in seventy-eight, ether in sixty-eight, and local anesthesia (infiltration of the gland and sacral) in four. The total mortality was 8.8 per cent. In the forty-seven fatal cases spinal anesthesia was used in twenty-eight (74.5 per cent); ether anesthesia in eleven (6.1 per cent); and nitrous oxide-oxygen anesthesia in eight (18.4 per cent). The chief cause of death was sepsis in twenty cases (42.5 per cent); pneumonia in seven; hemorrhage in six; renal insufficiency (uremia) and circulatory disturbances (embolus, apoplexy, myocarditis, etc.) in five cases each. In four instances it was impossible to determine the cause.

Perineal operations were done in thirty cases, with nine deaths (30 per cent) and suprapubic operations in seventy-one (thirty-eight stage operations) with nineteen deaths (26.7 per cent). Of the 100 cases twenty-nine were given tropococaine, twenty-six novocaine, sixteen apothecine, eight novol, three procaine. The drug employed in nineteen cases was not stated, but probably was tropococaine. Cancer as found in about 5 per cent of the cases, and nearly one third of these patients died, as compared with less than one

fifth of those with adenomata. In any considerable group of cases of spinal anesthesia spinal reactions ranging from nausea and vomiting, sighing respiration, and soft slow pulse to an alarming syndrome characterized by incontinence of feces, cyanosis, profuse sweating, a thready soft slow pulse, sighing restlessness, and stupor is to be expected in nearly 10 per cent.

THOMAS F. F. A. G. A. M. D.

Bryan, W. A.: Recurrence of the Benign Prostate. *Surg. Gynec. & Obst.* 9, 3, 1909, 59.

The author intends the word recurrence to mean the firmation, at longer or shorter intervals following what had been considered a complete prostatectomy of masses of prostatic tissue reproducing the original symptoms caused by urinary obstruction.

He uses the word benign in the sense that clinically and microscopically the secondarily appearing growths were not malignant.

He points out that there cannot, of course, be a true recurrence of removed pathologic tissue and that apparent recurrences are due to the growth of prostatic lobes or tissue not palpable at the time of the original operation which began to hypertrophy after the removal of the rest of the gland. He reports three such cases in his practice and draws attention to the necessity for bearing this possibility in mind in passing judgment on the work of previous operators.

H. S. SAMPSON, M.D.

Schultz, H. R. Castration of the Male by the X-Ray (Ein Beitrag zur Röntgen-Kastration beim Mann). *Schweiz. med. Wochenschr.* 9, 18, 1906.

The author castrated a man 34 years old by means of the X-ray. Just as in the female the functional condition of the ovaries makes a difference in the dosage necessary to obtain one of the various degrees of castration, so also in the male different doses are necessary in order to obtain one of the three phases of castration discussed by the author. The determination of the dose is very difficult as clinical signs indicating the time of spermatogenesis upon which the size of the dose should be based cannot be determined.

The phases of castration and the doses necessary to obtain the desired degree of castration are given as follows:

Temporary sterilization with clinical oligo-spermia. Necessary dose: at least 34 per cent of the skin unit dose in the male; 30 per cent in the female.

Total permanent aspermatogenesis. Dose: about 60 per cent of the skin unit dose in the male; in the female with Wint's excretion, 33 per cent.

Total castration with destruction of all the constituent elements of the testicle. Dose for male not yet determined; in the female 34 per cent of the skin unit dose.

ROSENFELD (2).

MISCELLANEOUS

Nichols, B. H.: Important Points in the Technique of Roentgenological Examinations of the Urinary Tract. *Am J Roentgenol* 10:3:30

When a case is referred to the roentgenological laboratory for examination diagnostic plates are made of the entire urinary tract. This is usually done without preliminary preparation and if suspicious shadows are found second examination is made after thorough cleansing of the bladder by saline cathartics and enemas. The technique employed consists of the use of diphter films with double screens and a Potter Bucky diaphragm and a soft lead rubber bag for compression.

If a definite shadow is visualized in the kidney as an attempt is made to locate it accurately by making pyelograms. If it is in the pelvis, the injected fluid usually obscures the stone. A suspicious shadow in the ureteral area on either side is checked by catheterization of the ureters. The opaque catheter and films make it difficult to determine the proximity of the shadow to the catheter. At times even this procedure is not sufficient to show whether or not the shadow is that of stone in the ureter. If the ureter is dilated the shadow may be at some distance from the catheter. In such case a retrogram will give the required information.

The radiologic appearance and position of the kidney is included in every report together with statement as to the presence of pyelonephrosis or any other pathologic condition of adjacent organs which may possibly account for the symptoms. When the films show no calculus mention is made of the possibility of non-visibility of stones in small percentage of cases.

If all the findings are negative and the clinical symptoms and history indicate disease such as lithiasis, the procedure catheterization with opaque catheter and the injection of opaque medium into the kidney pelvis and ureter are indicated. In hydro-nephrosis, hydronephrosis, deformed kidney pel-

vils and obstruction or kinks in the ureter may be demonstrated. A 30 per cent solution of sodium iodide is the most satisfactory solution for pyelography. Roentgenograms are made in both the horizontal and the vertical positions. A modified Young cystoscopic table with a Potter Bucky diaphragm built into it has been found to answer practically all requirements. (ARTHUR HARRIS, M.D.)

Flendrich, D. N.: Newer Aspects of Urinary Surgery. *J Am Soc M Sci* 9:3:11, 15

To make a diagnosis of a surgical affection of any part of the urinary tract one must be ready to apply all of the modern methods. Of the special methods of diagnosis Flendrich especially expressed his preference for pyelography. Techniques which formerly followed this procedure were due to the pressure which the liquid was injected and to the tenacity of the drug. These dangers have been entirely eliminated by the use of sodium bromide which is non-toxic and by allowing the solution to flow slowly gravity from a height of 3 ft.

A renal pyelogram in all exists in the kidney's cases of abdominal tumor prove the presence of hydronephrosis and give a characteristic picture of destruction of kidney tissue, renal neoplasms, calculus and stones. Uretrography and cystography are equally useful.

Methods of treatment have improved correspondingly. Here use of early diagnosis by modern methods, from 55 to 60 per cent of cases of renal tuberculous are permanently cured. Lasare and drainage of the renal pelvis has made it possible to remove a large number of kidneys which formerly could have been removed. The author has obtained the best results from 5 to 3 per cent after ureteral. He states incidentally that he considers the possibility of renal infection in every case of obscure fever.

Flendrich attempts to remove small calculi by relaxing the ureter by procaine and papaverine and dilating the majority of cases such treatment is successful. (B. J. ROSS, M.D.)

SURGERY OF THE EYE AND EAR

EYE

Hagg, G. H. Pemphigus of the Conjunctiva. *Med J Australia*, 9, 11, 356

The author reports four cases of this rare condition which were collected during twenty six years of ophthalmological practice in Tasmania.

None of the patients exhibited any signs of syphilis. The etiology is unknown, but cultures from the conjunctival sacs revealed Friedlander's diphtheria bacillus and Gram positive and Gram negative cocci. Probably some of these were due to contamination.

Pemphigus of the conjunctiva begins with redness and sticky, non purulent secretion. In some cases there may be small papules or bullae, but the actual bullae is seldom seen because the epithelium of the conjunctiva is so delicate that it quickly breaks when it is raised up by exudation. As the process progresses, cicatrization and shrinking of the conjunctiva takes place slowly the conjunctival cul-de-sac becoming shallower and finally obliterated, the folds of conjunctiva stretch from the lids to the eyeball, and the movement of the eyeballs becomes impaired. The secretion of the eye, which is at first increased, becomes diminished, and the surface of the eye becomes dry. The cornea becomes opaque and may ulcerate in advanced cases it often becomes dry and lusterless and fine scales may be shed from it. Trichiasis and entropion may develop, and the lids may become totally adherent to the eyeball.

The prognosis is most unfavorable, treatment seeming to be of little avail when the eye mouth and throat are involved.

Arsenic, which is often given, seems to exert a beneficial influence if not on the eye condition at least on the general health. Mercury and iodides have been prescribed in error the condition being mistaken for syphilis they have most harmful effect and should never be used. Soothing lotions and only applications may be employed for the eyes, and, if necessary operations may be performed for the trichiasis and entropion. Nothing, however has a permanent effect. C. CORRY YALLEY M.D.

Stark, H. H. The Etiology of Sympathetic Ophthalmia. *Am J Ophth* 9, 3, 4, 39

The theories as to the etiology of this disease fall into groups corresponding to the different periods of development in medical science. The most recent is 'Elekking's' theory of anaphylaxis which has been recently confirmed by Wood's experiments though other investigators express doubt to the possibility of the development of an auto anaphylaxis. Wood holds that any tissue of the eye may produce more than one antigen some of them common to

all the eye tissues, and others specific to a special tissue.

According to the most rational theory the antigen is developed through endogenous infection of the uveal tract by micro organisms which may remain in the host for many years. The organisms known to cause clinical symptoms similar to those of sympathetic ophthalmia are the tubercle bacillus and the spirochete pallida both of which at times exhibit decided affinity for all the tissues of the eye. The complement-fixation test eliminates syphilis as the primary factor.

Four arguments indicating that the tubercle bacillus is a factor are presented.

About two thirds of the cases of ophthalmia develop in early life, when slight or no immunity has been developed. This is in agreement with MacKenzie's observation that cases are most common in scrofulous children. Although as a rule the condition occurs within a few weeks after injury, in some cases it does not develop until years later, a fact indicating that the infecting organisms may be present at the time of the injury but remain dormant. This is true of the tubercle bacillus. If immunity becomes lowered, the bacilli may be distributed by the circulation and attack weakened or diseased tissue.

The clinical picture common to ocular tuberculosis and sympathetic ophthalmia is that of choroiditis, papillitis, plastic iridocyclitis, and nodules in the iris.

3. The ordinary pathologist is frequently unable to differentiate between the two conditions.

4. Gifford's method of using subtylates corresponds to the treatment of scleritis, which is believed to be due usually to tuberculosis.

The author has attempted to produce an antigen by culturing tubercle bacilli in a medium containing the uveal tract and also in the living eye. The result of these experiments will be reported later.

C. CORRY YALLEY M.D.

Knapp, A. Metastatic Thyroid Tumor in the Orbit. *Arch Ophth* 9, 3, 14, 68

Conheim was the first to recognize the fact that a struma may cause metastases. Such a tumor he called a metastatic benign struma. The metastases occur in the bones and in the lungs.

A case reported by Knapp was that of a man 66 years of age who presented himself for examination complaining of discomfort in reading and a soft mass in the upper margin of the right orbit occupying a round defect in the bone where pulsation could be felt. At operation the mass was found to be a tumor in the medulla of the bone in lying particularly the anterior part of the frontal bone. The cavity was filled with soft, dark red material which was

different; the peritoneum below and bled profusely. The bowal walls of the cavity were smooth.

The pathological report was adenoma of benign thyroid tissue reproducing thyroid structure to the smallest detail, many alveoli containing soft achlophile colloid surrounded by flat thyroid cells.

Symptoms of other metastases appeared one and one half years later in the orbit, scapula, ribs, lungs, and pelvis and a distinct tumor extending behind the sternum was discovered in the thyroid gland.

The metastases of adenocarcinoma of the thyroid may show normal thyroid adenomatous tissue. They grow slowly. The primary tumor in the thyroid is small and escapes detection often not being found until the character of the metastases is recognized.

H. K. M.D.

Smith, D. Factors Influencing the Choice of Method for Cataract Extraction. *Arch Ophth* 93, 11, 3.

No single method of cataract extraction is entirely satisfactory as routine for all cases.

The methods considered typical extraction after capsulotomy and extraction in the capsule either by pressure only as practiced by Smith, or by traction. The traction methods comprise traction with the forceps, as recommended by Verboef and Greenwood, traction by means of a suture, as in Barraquer's method, and combined traction and pressure as advocated by Knapp and Tuerk.

The factors which influence the choice of method are considered in three groups, the first including the age of the patient, the type and the stage of maturity of the cataract, and the presence of complication; the second, the probable behavior of the patient; the prominence or recession of the eyeball and the size of the cornea; and the third, the conditions affecting the operator such as his skill, his training, the frequency with which he operates, and the quality of his assistance.

Smith distinguishes three types of cataract in children: the membranous, which he extracts with forceps; the milky, which he needles; and the jelly-like, flocculent cataract, which he removes by linear extraction.

In cases of senile cataract the younger the patient the smaller the nucleus and the stronger the attachment of the lens, both zonular and by alveoli. Therefore the Smith method will probably be too difficult and capsulotomy should be done on all patients under 40 years of age and most of those under 35.

Six types of lenses are distinguished in senile cataract: the immature or osten, mature small or permature, thin hypermature, and sclerotic.

To predict the size, shape, and consistency of the lens and the strength of the capsule correctly requires much experience.

Slightly myopic eyes are perhaps best treated by the gentlest cycloplegic operation in which the smallest section is made that will allow the escape of the nucleus.

In eyes with tendency to glaucoma intracapsular extraction seems to be safer probably because of their freedom from soft lens matter blocking of the pupil, and capsular tags in the wound.

Bulging eyes and tightly fitting lids are not suited to any type of intra-ocular operation. For the eyes of poorly nourished persons which are sunken and deep set and have flaccid lids the intracapsular extraction is ideal. The predominance of this type of eye in India is an important factor in the success of intracapsular extraction in that country.

Cases of small cornea are amenable for intracapsular extraction unless the entire section is made well in the sclera. Small cornea do not imply small lenses nor shallow anterior chambers and in these cases the sclera may always be safely transfixed.

Intracapsular extraction by traction requires strong iridectomy such as is to be expected only in the very late mature and hypermature cases and membranes and after extract.

Dislocated lenses and cases complicated by glaucoma or ocular disease vitreous extraction in the capsule. Intracapsular methods should be chosen only for cases in which they are definitely indicated.

S. S. How, M.D.

Elliot, R. H. The Mist and Halos of Glaucoma. *Am J Ophth* 9, 3, 1.

The hazy symptoms of glaucoma are closely associated symptoms, arising from the diffraction of light. The halos belonging to glaucoma arise in the cornea and must be distinguished from those due to the crystalline lens or produced by air bubbles or cells on the corneal surface.

Elliot reports a careful study of the differences observable between these kinds of halos, all of which are considered diffraction phenomena.

As this excellent discussion suffers by condensation, those interested should refer to the original article.

C. C. COHEN, M.D.

EAR

Kerrison, F. D. The Improved Artificial Drum as an Aid to Hearing. A Study of Certain Principles Involved. *Laryngoscope* 49, 3, 1232.

The first demonstration of a natural change in hearing in cases of chronic catarrhal otitis media and kindred lesions with an intact drum membrane is very slight loss of acuteness in the bearing of the conversational voice and diminished bearing distance for the watch or ecometer. Frequently the patient can hear the ordinary watch only a few inches from the ear or only on contact, while he hears musical tones down to twenty six double vibrations or even lower.

When there is considerable destruction of the drum membrane (with or without partial destruction of the malleus) the first functional change is decrease in the bearing range. At the lower end of the musical scale.

Perforations in Shrapnel's membrane do not have any influence on hearing.

In cases of extensive perforations of the drum membrane a bit of sterile cotton flattened and cut into a disc like shape and applied against the perforation or against the tympanic structures present against the fundus of the canal will often increase hearing. Quite as often, however, it is absolutely without influence. It is thought that when the cotton disc is beneficial it finds its operable contact with the ossicular chain, re-establishing the conduction of sound as along the normal pathway.

The change in balance is perhaps the chief factor in the pronounced deafness in certain cases in which the drum membrane has been destroyed and in varying degrees is a contributory factor in all such cases. It is obvious that whatever reduces the difference between the respective degrees of mobility of the ossicular chain and the round window membrane under the direct impact of sound waves must necessarily interfere with the movements of the cochlear fluids and therefore reduce the hearing power.

The author reports a case of chronic suppurative otitis of both ears in which a cotton disc was applied to the remaining portion of the ossicular chain in the right ear without any improvement in hearing. A thin slip of paper saturated with alcohol was then placed against the postero-superior canal wall and by means of cotton applicator slid inward and downward into contact with the inner tympanic wall so that it passed over and approximately covered the region of the round window. The pa-

tient immediately remarked on the improvement in hearing.

Kernson has tried the paper slip method but found that in a number of cases it failed. Cases of deafness due to firm ankylosis of the tapes within the oval window are among those logically giving negative results. In some cases the use of both cotton disc and paper slip gave good results.

JAMES C. BRADWELL, M.D.

LILLIE, H. I. A Septic Type of Temperature Not Referable to the Ear in Cases of Acute Suppurative Otitis Media. *A. Otol. Rhinol. & Laryngol.* 9: 333, 1900.

If patient with acute suppurative otitis media has septic type of temperature, the natural tendency of the otolaryngologist is to ascribe the fever to extension of the infection from the ear and mastoid to the sigmoid and lateral sinus. It has been well established in such cases that in taking time to make differential diagnosis the physician does not endanger the patient. Such a course may reveal involvement of other structures which will count for the clinical picture.

It is believed that in five cases reported in this article four different disease conditions acted as causal factors of the septic type of temperature, namely pyelitis, central pneumonia, an abdominal postoperative condition and a gastro-intestinal disturbance. Treatment directed at these conditions appeared to clear up the symptoms, while operation in at least one would doubtless have resulted fatally.

SURGERY OF THE NOSE THROAT AND MOUTH

NOSE

Blackwell, H. B. Some Clinical Observations on the Correction of External Deformities of the Nose by the Intranasal Route. *Laryngoscope*, 9 3, XXXII.

Concave deformities approaching and including the saddle-back nose, whether caused by syphilis or trauma, are corrected by the use of rib and cartilage grafts about a 1 in. in length, taken from the anterior end of the eighth rib. The graft is split from side to side and frozen end to end and inserted through an intranasal incision at the mucocutaneous margin of the vestibule, lateral to the septum. The smooth curved surface of the rib is placed uppermost and the upper end of the graft placed in contact with the lower end of the frontal bone. For lesser deformities of this type a cartilaginous graft from a nasal spur or from the septum is used.

In cases of convex deformity, the beak-like nose, an intranasal incision is made in the soft parts below the deformity, to one side of the junction of the septum with the lateral wall of the nose. The osseous cavity is removed subperiosteally with forceps.

For the correction of lateral displacements which are frequently associated with deflection of the nasal septum, a submucous resection is done and the nasal bones are refractured at their attachment to the frontal bone.

In cases of long nose or nose with low tip and cases in which the septal cartilage is lowered with corresponding elevation of the lateral alar cartilage the soft tissues of the nasal partition below the cartilaginous septum are separated from its inferior edge by a through and through incision from the mental process of the superior maxilla to the tip of the nose. A second incision is made low down over the bridge and the lateral aspects of the nose and the soft parts are freely elevated. To elevate the tip, a triangular piece of cartilage with its perichondrium is removed from the lower edge of the septum, and the soft septal tissues are united by through and through sutures.

General anesthesia is usually employed. After the operation,aseline is applied to the skin over the nose and face. In cases of convex deformity and lateral displacement, a wet pad of boracic acid gauze is placed over the nose for twenty-four to forty-eight hours. W. B. STARR, M.D.

Seelin, O. J. The Intranasal Injection of Alcohol in the Treatment of Hyperaesthetic Rhinitis and Some of the Nasal Neurons. *J. Otol. Rhinol. & Laryngol.* 9 2, XXXI, 20.

The vasomotor disturbances of the nose may be treated by direct attack upon the nerves or by an

attempt at desensitization. The results obtained by the latter however have not been found very satisfactory.

In every instance a searching survey of the nasal chambers should precede any radical method of treatment. Local pathology in the nose should be dealt with properly.

It is a well recognized fact that the great fifth nerve and its intimate connections with the sympathetic and motor nerve systems plays an important rôle in a variety of disturbances arising from its stimulation or irritation, whether this takes place from within or without. Just why irritation of these nerves should be followed in one instance by pain, in another by reflex asthma, in another by rhinorrhea, and in another by the so-called hay fever syndrome is a physiological anatomical study which opens up an immense field for speculation and investigation.

The distribution of the intranasal nerve supply may be divided into two divisions. The anterior division is the nasal or ethmoidal nerve. The posterior division is the branches of the sphenopalatine ganglion. After the production of local anesthesia with cocaine the anterior division is injected at its foramen or where it enters the nose. A specially designed needle and syringe are used for this purpose.

In injecting the posterior division the region of the sphenopalatine foramen is the point of election. A special needle is used also for this purpose. The injection should be preceded by the application of cocaine to the region of the ganglion.

Alcohol is the most suitable substance for injection because it is sterile, non-toxic and non-corrosive. A 75 per cent solution of absolute alcohol with sterile water is used. About 10 minims are employed for each injection.

The functional activity of the nerve is restored to normal within a variable period. Seasonal cases may require re-injection each season. The more exact the injections the more effective and lasting the results.

FARVER K. HAMMILL, M.D.

Grove, W. E. Malakia in the Fracture and Irritation of the Maxillary Bone. *J. Otol. Rhinol. & Laryngol.* 9 2, XXXI, 9 3.

In 76 a French dentist, Jourdain by sense of touch alone and without the use of artificial illuminations, irrigated the maxillary sinus through the ostium maxillare. In 883, Hartman reported three cases cured by irrigation through the natural opening into the antrum, and in 886 he treated thirty-two cases by irrigation through the natural opening or by packing a drill canal through the posterior fontanelle.

Puncture through the inferior meatus for aspiration was first described by Moritz Schmidt in 1833. Lichtitz, in 1890 syringed through the inferior meatus, and Capdepon, in 1894 practiced air irrigation by this method.

Gurhis discovered that the veins of the antral mucosa are very numerous, and that frequently there is a thick venous plexus, sometimes on the orbital wall, sometimes on the nasal wall.

Grove has collected the reports of fifteen cases in which death followed antrum puncture, air inflation, and irrigation of the antrum. In eleven cases it occurred in a few minutes and in four at the end of a period varying from a few hours to thirty-six hours. According to the case reports in which sufficient detail was given the ante-mortem symptoms were very much the same in every instance. There was sudden collapse with unconsciousness, cyanosis, pulse and respiration changes, tonic and clonic contraction of the various groups of muscles or of all the muscles, and sometimes epileptiform attacks. We must therefore assume from the more or less common symptomatology preceding death in all cases that we are dealing with a causative factor which is common to all of them. The puncture was done seven times from the inferior meatus and three times from the middle meatus; the route in five cases was not mentioned.

Autopsies were performed in seven cases. Three were negative. In two cases minor hemorrhages or signs of stasis were discovered in various organs and in two cases air was found in the circulation. Bowen's case showed a detached thickened mucosa of the sinus with needle wound.

Another series of twenty-nine cases collected from the literature included twenty-five cases of puncture and irrigation of the maxillary sinus and four cases of inflation of the sinuses with air. In the twenty-five cases the puncture was done fifteen times through the inferior meatus and twice through the middle meatus; in the remaining eight case reports the route of the puncture was not given. In this group collapse occurred and there were serious general symptoms, including suspended or altered breathing, pulse changes, tonic and clonic contraction of the muscles, hemiplegias, etc.—the same general symptoms as those in Group 1—b but no fatalities.

In a third group of cases, six in number, the common symptom was transitory blindness.

These three groups were similar in many respects. The complications are apparently not dependent on section or faulty technique.

A fourth group was made up of cases in which the complications were caused by forcing air irrigating fluid or products of infection into the tissues adjacent to the antrum during the act of puncture or irrigation. There were no fatalities.

The author reports the case of a young adult who had an acute maxillary sinus infection with redness of the left eye and pain below it. Treatment consisted of infiltration of the middle turbinate followed

by shrinkage and suction for one week and then irrigation of the antrum. Seventeen days after the beginning of treatment, 1 ccm. of a 5 per cent protargol solution was introduced into the sinus after irrigation. When the attempt was made to introduce a second 1 ccm. the injection caused extrusion of the bulb marked subcutaneous swelling of the upper and lower lid, and great pain in and around the eye. Crepitations could be felt in both the upper and the lower lid near the inner canthus.

Treatment by the application of heat, 1/4 gr. cathartics, and sweating was given. After twenty-four hours ice was used instead of heat. Optic atrophy developed and the sight of the eye was lost.

The author believes that the causative factor was the same in all of these cases. As the complications did not occur at the time of the puncture itself but developed later during the period of air inflation or syringing the puncture itself as a cause can be eliminated.

It is improbable that cocaine or novocaine poisoning was responsible for the complications as many of the patients had had previous cocaine or novocaine anesthesia without untoward results.

Two other possible causes are (1) a nasal reflex through the vagus and trigeminal nerves, (2) air embolism.

Air embolism is thought to be the cause of the complications in the cases of Group 1 and in most of those of Group 2. The air enters the circulation during the inflation of the antrum through the puncture of the sinus in the antral mucosa proceeding by the facial and jugular vein to the right heart.

The complications in the case reported by the author are attributed to the underlying infection of the sinus rather than to the accident which occurred at the time of the irrigation.

The following conclusions are drawn:

Puncture and irrigation of the maxillary sinus are useful diagnostic and therapeutic measures.

It makes little difference whether the irrigation is done through the inferior or the middle meatus. The use of the middle meatus is probably the easiest for the patient.

3. The procedure as formerly employed is not entirely free from danger.

4. While the effect of the anesthetic used and vagus irritation cannot be entirely eliminated, the chief danger lies in the air inflation rather than the act of puncture or the irrigation.

5. The procedure can be made comparatively safe if the use of air before and after irrigating is avoided.

W. B. STARR, M.D.

Blackwell, K. S. Carcinoma of the Antrum of Highmore. *Surg. Clin. N. Am.* 9, 2, 445.

The author reports a case of carcinoma of the antrum treated radically as follows.

After multiple ligation of the left carotid and the removal of several lymph nodes for examination an incision was made over the left superior maxilla,

beginning on the left side of the nose and following the nose around to the midline of the upper lip. The lip was cut through and the flap dissected back. The bony wall of the superior maxilla appeared normal. For exploration, the antrum was opened with a chisel and the opening enlarged. The bone at this point which as the a tenor wall of the antrum, seemed normal. When the opening was enlarged a mass of tumor tissue in the back part of the antrum was exposed. The wound was thoroughly cauterized, and an incision was made below the lower left eyelid from the upper end of the incision along the border of the nose outward for a distance of about $\frac{1}{2}$ in.

Another incision was made in the mucoperiosteal covering of the hard palate a little to the left of the midline. The bone of the alveolar process and the bone of the hard palate were cut through with bone forceps and the attachment of the lower part of the superior maxilla to the upper portion beneath the orbit severed with bone forceps. The lower portion of the superior maxilla was then removed, the orbital plate being left intact. The tumor occupied the upper and posterior part of the antrum, and seemed to have gone through the bone at one point posteriorly and to the outer side. This extension, however, was not great. The posterior palate bone and all of the soft structures of the palate remained intact. Following the removal of the tumor with the periosteal elevator the bone and soft tissues were thoroughly cauterized with the Percy cautery. The entire raw surface of the wound was then gone over thoroughly with a sharp electric cautery and every raw surface was well cauterized to prevent implantation. The septum between the antrum of Hughton and the nasal cavity was completely removed. The cavity was packed with iodoform gauze, and the wound closed with interrupted sutures of fine silk-worm-gut. The packing was brought out through the mouth.

The patient made a satisfactory recovery and was discharged November 9, 1902. During the first ten days in the hospital a good deal of slough separated from the burned area.

On March 9, 1903 the patient returned for examination. At the roof of the wound which corresponded to the back part of the bony portion of the orbit and the tissue immediately beneath it, as an area about $\frac{1}{4}$ in. in diameter which presented a granular appearance. The rest of the wound was smooth and firmly healed, and showed no signs of malignancy. A frozen section was made of tissue taken

from this region with a curette, the wound being immediately thereafter disinfected with pure carbolic acid. The section showed cancer of the squamous-cell type. Three needles of radium, each containing 10 mgm. were inserted into the portion and left in for twelve hours. The patient returned at intervals, and the area of cancer seemed to become smaller.

On June 10, 1903 a small area in this region still presented somewhat the appearance of cancer. A frozen section showed cancer of the same general type as that found at the operation. Sixty milligrams of radium screened in a copper tube were fastened to this point by linen suture, and gauze was packed so as to hold it in position. The radium was removed after twenty-four hours. A week later there was considerable reaction not only in the cancerous area but also in the surrounding healthy tissues. This gradually disappeared leaving a small surface of necrotic tissue corresponding to the area of the cancerous growth and extending about a distance around it.

When the patient was last seen on August 5, 1903 there was no evidence of recurrence.

O. V. Rott, M.D.

MOUTH

Fischer, M. H. Some Physiological Principles in Orthodontia. *Internat. J. Orthodont. Oral Surg. & Radiography* 9:1, 11, 6.

Orthodontic procedures should be initiated early as bone absorption and bone deposition occur more quickly and effectively in young structures.

Slow correction is better than quick correction as it is associated with less danger of tooth strangulation and allows bone absorption followed by bone deposition without the hazard of bone necrosis such as invariably follows excessive and too rapidly applied pressure.

Correctures which apply counter-pressure to the jaw are always preferable to those which apply counter-pressure to the individual teeth as the jaws can withstand greater pressure than teeth movable in their socket. When pressure is applied to the teeth it should be applied to as many of them as possible.

The poor condition of many teeth in infancy is due to abuse. Nourishing food is essential to develop the teeth and bring them into use.

JAMES C. BRADWELL, M.D.

BIBLIOGRAPHY of CURRENT LITERATURE

GENERAL SURGERY—SURGICAL TECHNIQUE

NOTE.—The bold face figures in brackets at the right of reference indicate the page of this issue on which abstract of the article referred to may be found

Operative Surgery and Technique

- Plastic surgery L W JOHNSON U S N A 31 M
Bull 9 3, xviii, 4
Cavity dissections for metastatic cancer A C SCOTT
Surg Clin N Am 9 3, 489
No hand touch technique A R GRANT Surg Gynec
& Obst 9 3, xxviii, 66 [289]
The technique of knot W J SULLIVAN J Am M
Ass 9 3, lxxx, 80
Instruments left in the peritoneal cavity C WHITE
Med Press, 9 3, a, civ, 7
The post hospital care of surgical patients H H
TROUT South M J 9 3, xvi, 36
That beneficial cathartic after abdominal operations
C A HOWARD Canadian M Ass J 9 3, xii, 36 [289]

Aseptic and Antiseptic Surgery

- Antiseptics in common operations W E DRYDEN
Practitioner 9 3, cx, 3
The value of chloroform as an antiseptic M GRUBER
Wald and B. FRAZEE Klin Wchnschr 9 3, 78
Iodine and xodotherapy based on new iodine prepara-
tion H J NOVACEK N Y M J & Med Rec 9 3
cxviii, 60
Asepsis in compound fracture W I MIDOWITZ U S
Naval M Bull 19 3, xviii, 89

Anæsthesia

- Choosing anæsthesia for general surgery J M H. 33
Minnesota Med 9 3, vi, 35
Anæsthetics in common operations D W BURTON
Practitioner 9 3, cx,
Studies in experimental traumatic shock the action of
ether on the circulation in traumatic shock M CARROLL
Arch Surg 9 3, vi, 41 [289]
Conduction anæsthesia in the region of the lower jaw
F. MÖLLERLIN Deutsche Vrttschr f Zahnchir 9
04
A technique of spinal analgesia for laparotomy S A
LAW Lancet 9 3, cxv, 29
The induction and maintenance of lumbar anæsthesia
O. HÄGGGREN Deutsche Ztschr f Chir 9 3, cxciv, 330
Remarks on the value of buty, as local anæsthetic
W M BEAUMONT Brit M J 9 3, 1, 57
Protein coloring of toxic alkaloids, particularly
cocaine, to prevent their abuse W KOSSEL Zentralbl
f Chir 9 3, xlix, 77

Surgical Instrument and Apparatus

- A sterile syringe receptacle H RICH Zentralbl f
Chir 9 3, xlix, 83
A thoracic abdominal gas J J REUTENWALD N
York M J & Med Rec 9 3, cxviii

SURGERY OF THE HEAD AND NECK

Head

- Head injuries of ear B T LOTT Med J Australia
9 3, 1, 5
Fractures of the skull E SACCHI Surg Clin N Am
9 3, 47
Cranioplasty with cartilage W T COUGHLIN Surg
Clin N Am 9 3, 4, 67
Transplantation of costal cartilages for depressed frac-
ture of the frontal bone C A McWILLIAMS Ann Surg
19 3, lxxviii, 5
Epilepsia and sebaceous cyst of the scalp side by side
H A ROYSTER Surg Clin N Am 9 3, 293
Generalized tonic spasms, hemiparesis and coma, the
result of a lateral sinus thrombosis S SALINGER Laryn
go-scope, 9 3, xcxi, 27
A new frontal sinus instrument J A HAGEDORN
N York M J & Med Rec 19 3, cxvii, 4
Extradural abscess complicating frontal sinusitis—
report of case R H SCHULTZ Ann Otol Rhinol &
Laryngol 9 3, xxxi, 697
Septic meningitis secondary to otitis media O H P
PERRY Med Clin N Am 9 3, vi, 93

- Herpetic meningo encephalitis in rabbits C DA FANO
J Path & Bacteriol 9 3, xxv, 85 [290]
A brain abscess of rather long duration C J ADAMS
Ann Otol Rhinol & Laryngol 9 3, xxxi, 934
Otic abscess of the cerebellum report of case C F
YANKEA J Am M Ass 9 3, lxxx, 224
Tuberculosis of the brain in syphilitic individual
terminating in acute meningitis J L LEAKE Bull
Buffalo Gen Hosp Buffalo 9 3, 4
The picture of hypophyseal carcinoma W KROLL Wern
Arch f inn Med 9 3, 555 [291]
Parotitis from an unusual cause H W LEWIS South
J M & S 9 3, lxxv, 33
Cyst of the parotid gland enucleus H C ROYSTER
Surg Clin N Am 9 3, 2, 77
Plastic operations on the nose and forehead JI S
MILKA Surg Clin N Am 9 3, 2, 597
A case in which the cheeks are raised by modification
of the Joseph operation V F CHAPMAN Wern med
Wchnschr 9 3, lxxv, 336
Atypical plastic operations for congenital fissures of the
lip and palat J E THOMPSON Surg Clin N Am 9 3, 2,
337 [291]

Rhinoplasty and cheek, chin, and lip plastic with tubed, temporal pedicled forehead flaps. C. A. McWilliams and H. S. Decker. *Surg. Gynec. & Obst.* 1923, xxvii.

[293]
Carcinoma of the cheeks and lips: general principles involved in operation, and summary of results obtained at the Presbyterian, Memorial, and Roosevelt Hospitals, New York. G. E. Brewer. *Surg. Gynec. & Obst.* 1923, xxvii, 60.

The diagnosis of osteomyelitis of the upper jaw. C. Liviu. *Chirul. med.* 9, 12, 1923.

A typical mandibular fracture. E. L. Walter. *U. S. Naval M. Bull.* 9, 3, xviii, 88.

Ununited fracture of the mandible. W. T. Colquhoun. *Surg. Clin. N. Am.* 1923, ii, 1600.

Phosphorus necrosis of the mandible. H. P. Pickering. *Brit. J. Surg.* 1923, x, 380.

Osteoma of the hard palate. J. S. Horsley. *Surg. Clin. N. Am.* 1923, ii, 142.

Loose perforation of the hard palate with surgical closure. F. E. Loct. *U. S. Naval M. Bull.* 9, 1, xviii, 86.

Textbook and atlas of surgery of the teeth and mouth. Ed. P. Pharis. Macos. Munich. Lehmann, 9.

Myeloid sarcoma of the posterior pillar of the fauces. N. Patterson. *Proc. Roy. Soc. Med. Lond.* 9, 3, xvi, Sect. Laryngol. 3.

The radium treatment of carcinoma of the mouth. L. R. Tatum. *Med. Clin. N. Am.* 9, 1, vi, 383. [294]

Carcinoma of the tongue treated by embedding glass ampoules containing radium emanation. F. E. Skirrow. *Chicago M. Rec.* 1923, xiv, 479. [294]

Neck

Deformity of the neck treated by transplantation of fat. S. McGuire. *Surg. Clin. N. Am.* 1923, ii, 59.

Abscesses descending from the upper air passages. O. Glouan. *N. York M. J. & Med. Rec.* 1923, cxvii, 20. [294]

Tuberculous glands of the neck and apical accessory parathyres. F. H. Larey. *Surg. Clin. N. Am.* 1923, ii, 609. [295]

Abscesses of the larynx and trachea following influenza. C. F. Thomson. *Ann. Otol. Rhinol. & Laryngol.* 19, xxxi, 118.

A case of tuberculosis of the larynx. J. Douglas Gray. *Proc. Roy. Soc. Med. Lond.* 1923, xvi, Sect. Laryngol.

The treatment of dysphagia in laryngeal tuberculosis by resection of the superior laryngeal nerve. Steinerwald. *Verhandl. d. Kong. Russ. Chir. Petrograd*, 1923.

Benign neoplasms of the larynx. J. A. Canale. *Illness M. J.* 1923, xii, 50.

Lipoma of the larynx removed by operation. A. J. M. Wicker. *Proc. Roy. Soc. Med. Lond.* 1923, xvi, Sect. Laryngol.

Cancer of the larynx. C. Jackson. *Ann. Surg.* 1923, lxxvii, 118.

A case showing unusually early metastasis in carcinoma of the vocal cords. A. E. Hertzler. *Ann. Otol. Rhinol. & Laryngol.* 1923, xxxi, 12.

Fatal roentgen injuries of the larynx. F. von Hoesen. *Munchen. med. Wochenschr.* 1923, lxxv, 1667.

Hemilaryngectomy for carcinoma. F. Munster. *Lancet*, 9, 3, cxv, 78.

A case of laryngectomy following thyrotoxicosis. C. A. S. Rindorf. *Proc. Roy. Soc. Med. Lond.* 1923, xvi, Sect. Laryngol. 8.

The technique of thyrotoxicosis. A. E. Hertzler. *Ann. Otol. Rhinol. & Laryngol.* 1923, xxxi, 103. [295]

The value of basal metabolic studies in the differential diagnosis of conditions resembling hyperthyroidism: presentation of four cases illustrating its value. H. K. Mosler. *Med. Clin. N. Am.* 1923, vi, 140.

Preservation of the life of completely parathyroidectomized dogs by means of the oral administration of calcium lactate. A. B. Lichtenhan and B. Goldstein. *J. Am. M. Assn.* 1923, lxxv, 79.

Chemical features of thyroid disease. W. A. Plummer. *Ann. Clin. Med.* 1923, i, 59.

The larynx in diseases of the thyroid. G. B. New. *Ann. Clin. Med.* 1923, i, 103.

The heart in thyroid disease. F. A. Williams. *Ann. Clin. Med.* 1923, i, 109.

Thyroiditis. C. A. Halling. *Ann. Clin. Med.* 1923, i, 10.

Acidosis in hyperthyroidism. R. H. Major. *J. Am. M. Assn.* 1923, lxxv, 83.

Incidence of goiter in college students (women). R. P. Gossamer. *Ann. Clin. Med.* 1923, i, 148.

Five goiter patients. W. Bartlett. *Surg. Clin. N. Am.* 1923, ii, 515.

The significance of nodules in the thyroid gland. H. Horck. *Deutsche Zeitschr. f. Chir.* 9, 2, cxvii, 85.

Adenoma of the thyroid. J. H. Simpson. *California Stat. J. M.* 9, 2, xxi, 16.

Multiple adenoma of the thyroid, toxic, subterminal. I. Small. *Surg. Clin. N. Am.* 1923, ii, 35.

Enophthalmic goiter. W. D. Haggard. *Surg. Clin. N. Am.* 1923, ii, 69.

Enophthalmic goiter. S. McGuire. *Surg. Clin. N. Am.* 1923, ii, 109.

The appetite in enophthalmic goiter. I. Braun. *Ann. Med.* 1923, xxxi, 43.

The roentgen treatment of Basedow's disease. L. Enck. *Wiener. Medizin. Wochenschr.* 9, 2, xxi, 803.

Histologic study of the effect of ligation of the thyroid vessels in enophthalmic goiter. A. S. Okamoto and H. D. Caylor. *Surg. Gynec. & Obst.* 1923, xcvi, 75. [296]

Chemical treatment of thyroid gland diseases. M. Gorn. *Alle. med. Zentr.-Ztg.* 9, 4, xxi, 9, 3.

The chemistry and the pharmacological action of thyron. E. C. Kitchell. *Ann. Clin. Med.* 1923, i, 126.

The X-ray treatment of thyrotoxicosis. J. S. Taubert. *Illness M. J.* 9, 2, xii, 64.

Goetz's test and radiotherapy in diseases of the thyroid. T. A. M. M. J. de Meib. *de Med. d. Electric.* 1923, vi, 30. [297]

Surgery of the thyroid gland. P. A. White. *J. Iowa State M. Soc.* 1923, xxi, 1. [297]

The blood supply of the thyroid gland and its surgical significance. E. V. Master. *Surg. Gynec. & Obst.* 1923, xcvi, 60. [298]

The Mayo and Crile clinics with special reference to thyroid surgery. W. H. Bowen. *Brit. J. Surg.* 1923, x, 339.

Tetany after hemithyroidectomy. F. Sachs. *Med. Klin.* 1923, xlvii, 145. [299]

The end result of surgery of the thyroid. J. D. Fox. *Ann. Clin. Med.* 1923, i, 106.

Further observations on the function of the parathyroid glands. A. W. Bell and R. S. McCauley. *J. Lab. & Clin. Med.* 1923, xii, 33.

Thyroglossal cyst—case report. C. N. Gellman. *Ann. Med.* 1923, xxi, 34.

SURGERY OF THE CHEST

Chest Wall and Breast

Bilateral chronic open pneumothorax cured by negative tension report of case E M ESKERS Arch Surg 93 93 vi, 66 [299]

Unusual cases of emphysema W WHITTEBURY Surg Clin N Am 93 11, 995 [299]

The question of chronic emphysema and its treatment F V HENRY Rhode Island M J 9 3 vi, 6

Recent progress in the treatment of chronic emphysema C A HEDGECOCK J Iowa Stat M Soc 9 3, xii, [299]

The early treatment of emphysema by aspiration T McCRACK Med Clin N Am 93 vi, 844

Anomalies of the nipples KARL CASOP Mh Ztsch 93 11, 1039

Chronic cystic mastitis M LARKER Nebraska Stat M J 93 vii, 24

The diagnosis of indefinite masses in the breast D C L FRIEDWILLIAMS Brit M J 93 4, 94

Tumors of the breast W JERSON J Iowa Stat M Soc 93 xii, 4 [299]

A case of endothelioma of the male breast following an injury H K GALTHER Lancet 9 3, 60

Carcinoma of the breast I ANELL Surg Clin N Am 93 11, 3

Remarkable freedom from local recurrence following chemical removal of advanced cancerous breast C W STRICKELL N York State J M 93 xiii, 27 [300]

Results and technique in the treatment of carcinoma of the breast by radiation B J LEE Ann J Roentgenol 93 2, 6 [301]

Recurrences in breast cancer A SCHWARTZ and P FIEDER Bull et infim Soc de chir de Par 9 xivii, 1994

Trachea and Lungs

A case of papilloma of the trachea J DUNN GRANT Proc Roy Soc Med Lond 93 xvi, Sect Laryngol 7

Hernia of the lung and adenoma of the thyroid E A GRAMM Surg Clin N Am 9 11, 1495

The operation for traumatic hernia of the lung A LINDENBERG Zentralbl f Chir 93 xix 1408 [301]

A case of hydatid of the lung W A R SELLAR Med J Australia 93 11, 671

Pneumothorax or broncholith H FOX J Am M Ass 93, lxxx, 75

Emphysematous pneumonia J C LYTER Med Clin N Am 93 11, 97

The etiology of postoperative pulmonary complications E C CUTLER Surg Clin N Am 93 11, 935 [303]

Lung abscess G J HEUER and P M MACCARTHY Arch Surg 93 vi, 137 [302]

Lung abscess A L LOCKWOOD Arch Surg 93 vi, 114 [302]

A case of lung abscess due to the Friedländer bacillus E A GRAMM Surg Clin N Am 9 11, 904

Post-tuberculous pulmonary abscess M E BOYS some California State J M 93 xii, 9

Damaged lungs and bronchiectases C RIVERK Brit M J 1993, 1, 141

Extensive bronchiectases in young child D L BARTON Med J Australia 93 1, 99

The establishment of temporary or permanent pulmonary lip fistula in the conservative treatment of advanced bronchiectatic lung abscess W MYERS N York M J & Med Rec 93, cxvii, 7 [302]

The interrelationship and end results of chronic suppurative diseases of the lung W S LAMSON Arch Surg 9 3, vi, 343 [303]

The differential diagnosis between tuberculosis and lung abscess L T LEWALD and N W GREEN Arch Surg 9 3, vi, 303

X-ray study of tuberculous lungs T FRAXER and J D MACRAE N York M J & Med Rec 93 cxvii, 34

Radiographic diagnosis of tuberculous pulmonitis A N SINGLARI Ann Clin Med 93 1, 440

The value of the roentgenogram in the diagnosis and prognosis of pulmonary tuberculosis G G OLSBERG N York M J & Med Rec 93, cxvii, 9

The indications for and the results of, pneumothorax and surgical treatment of pulmonary tuberculosis M WEDDERBURN Wien med Wochenschr 93 lxxx, 973

Some principles of immunology applied to treatment by artificial pneumothorax N BARLOW N York M J & Med Rec 93, cxvii, 9

Reflections upon nine and one half years' experience with artificial pneumothorax P H RINGER N York M J & Med Rec 9 3, cxvii, 14 [304]

Surgical treatment in cases of pulmonary tuberculosis H M D VAN Brit M J 9 3, 35 [304]

Fibrosis of the lung following ligation of the pulmonary artery combined with phrenotomy and partial occlusion of the pulmonary veins K SCHLAFER Arch Surg 93 vi, 358 [304]

A case of primary carcinoma of the lung H J C GINSBERG and G M FINTOLA J Am M Ass 93 lxxx,

Heart and Vascular System

The value of pericardotomy in diagnosis and treatment J B ROBERTS Arch Surg 9 3, vi, [305]

Resuscitation intracardiac injections D W CATT Surg Gynec & Obst 9 xxxv 77 [305]

Pravus injections into the left ventricle W CARMACK Polska gaz lek 93 708

Primary tumors of the heart A GORDON Zentralbl f Herzkrankh 93, xiv 99

A method of ligaturing the first stage of the left subclavian artery from behind A K HICKY Brit J Surg 9 3, x, 307

Pharynx and Esophagus

Hemorrhage from the aorta in case of foreign body in the esophagus W TUCKERMAN Polska gaz lek 9 4, 440

The thoracic route for the removal of foreign bodies from the esophagus L HARTMANN Deutsche Ztschr f Chir 9 dixv 59

Congenital stricture of the esophagus with esophago-tracheal fistula report of three cases E WILSON J Am M Ass 93, lxxx, 6 [306]

Surgical treatment of the esophagus H FISCHER Arch Surg 93 vi, 50 [306]

Second report of esophageal cancer treated with radium C W HANFORD Chicago M Rec 9 3, xiv 404

A radium needle for the esophagoscope S YANKAUER Arch Surg 93, vi, 508

Miscellaneous

Foreign bodies in the air and food passages H B OXLEY J Med Soc N Jersey 9 3, xi, 5

- Profuse hemoptysis E WARR Med Clin N Am 93, 4, 607
 A dermoid cyst of the anterior mediastinum E MOORE Arch francs belges de chir 92, xxv, 959 [304]
 Posterior mediastinotomy H LILLINGSTON Arch Surg 92, vi, 274 [307]
 Surgery of the mediastinum, including the heart and esophagus E W ANGERHALD, L T LEWALD, F J TONKES, and others Arch Surg 92, vi, 289 [307]
 Diaphragmatic relocation J BOWEN Cervical Intell 92, lvi, 40

- Immobility of the diaphragm, with report of cases of bilateral immobility J H PARON N York M J & Med Rec 92, cxviii, 75 [303]
 Chest surgery R H DUFFY-VERLACK J Med Soc New Jersey 92, vi, 80
 The present and future in thoracic surgery S ROSEY Arch Surg 93, vi, 247
 Thoracic surgery war losses in civil practice R P ROWLANDS Lancet, 92, cxv, 10
 Tetralogy of the right chest cavity report of case W WHITCOMBE Arch Surg 92, vi, 282 [309]

SURGERY OF THE ABDOMEN

Abdominal Wall and Peritoneum

- The operative treatment of umbilical hernia N LILLINGSTON Deutsche med Wchnsch 19, 2, 219a, 219 [305]
 Epigastric hernia A J BROWN Nebraska Stat M J 92, vii, 1
 Bilateral indirect hernia with acute appendicitis in the right iliacal sac W P BRADSHAW Surg Clin N Am 92, ii, 383
 A case of primary gelatinous tumor of the peritoneum (possibly pseudocystoma of unknown origin) W L DAVIS Bull Buffalo Gen Hosp Buffalo 92, i, 27
 Proof of cure in case of tuberculous peritonitis H A ROBERTS Surg Clin N Am 9, ii, 1285
 Peritonitis carcinomatosa complicating scirrhous cancer of the stomach (leatherbottle stomach) T G MILLER Med Clin N Am 92, vi, 9

Gastro-Intestinal Tract

- New light on gastric peristalsis W C ALVAREZ Am J Roentgenol 93, x, 31 [306]
 Gastrostomy for large open safety pan F W BAILEY Surg Clin N Am 19, 2, 14, 1637
 Cardiospasm J C BRADWELL J Oklahoma Stat M Am, 1923, xvi, 5
 The mechanism of hyperchlorhydria F L ARVIEL Med J Australia, 92, 14, 23 [309]
 Congenital hypertrophic pyloric stenosis S McGOVERN Surg Clin N Am 92, ii, 263
 Congenital pyloric stenosis R HILL Surg Clin N Am 92, ii, 1075
 The employment of 16 duodenal tubes in gastroenterology E P HILLER J Am M Ass 92, lxxx, 3
 The distribution of acid cells along the dorsal curvature of the stomach and the possible relation to the occurrence of gastric ulcer H E RANSCH Surg Gynec. & Obst. 92, xxxvi, 87 [310]
 Gastric ulcer I ARNELL Surg Clin N Am 92, ii, 3
 Ulcer of the stomach and duodenum D ROBERTS J Am M Ass 92, lxxx, 226
 The pathological relationship between ulcerative processes in the stomach and duodenum and epigastric hernia H SELLER Arch f klin Chir 92, cxv, 385 [311]
 Gastroperitoneal ulcer an experimental study A H MONTGOMERY Arch Surg 92, vi, 36
 Hour glass contraction of the stomach due to ulcer H S McKEAY Surg Clin N Am 92, ii, 39
 Pylorotomy for high ulcer of the lesser curvature W BRAUNER Writschbeweg Dyelo 192, iii, 245 [311]
 Perforation of ulcer of the posterior wall of the stomach W CLOOS Beitr Klin Chir 1922, cxvii, 33

- How should an ulcer of the stomach and duodenum which has perforated into the abdominal cavity be operated on and treated? W ROBERTS Deutsche med Wchnsch 92, 219a, 220 [311]
 Forty four cases of simple perforation of gastric and duodenal ulcers with simple method of surgical treatment L R SCHMIDT Acta chirurg Scand 92, lv, 34 [312]

- The fallibility of roentgenological evidence of healed gastric ulcer E HOLLANDER J Am M Ass 92, xxx, 59 [312]

- The diagnosis of gastric and duodenal ulcer without the aid of modern laboratory and the roentgen ray O J HARRY Minnesota Med 1923, 4

- Medical and surgical treatment of gastric ulcer B F LOUWENHO J Lancet, 92, xlix, 3

- The effect of gastro-enterostomy on gastric function as interpreted by the fractional test meal E F GUY Brit J Surg 92, 3, 403

- Dumper gastro-enterostomy J C O'DONN Surg Gynec. & Obst. 92, xxxvi, 99

- The closure of certain acute symptoms following gastro-enterostomy R L HADEN and T G ORR Balk Johns Hopkins Hosp, Baltimore, 92, xxxv, 86

- A rare complication of posterior gastro-enterostomy by HICKER's method E A DELATRO Deutsche Ztschr f Chir 19, 2, cxvii, 69

- Resection of the stomach by the Balfour I method in 5 cases of gastric ulcer M FRIEDMAN Zentralbl f Chir 9, 2, xlix, 10

- Deflection of the biliary and pancreatic secretions by jejunostomy as a complement of gastro-enterostomy or gastrectomy L CARL and N P VI Brunsbls woch 92, iii, 37

- Lymphoblastoma of the stomach report of two cases E C CUTLER and J A SATTIN Surg Clin N Am 9, 2, 1105 [312]

- Cancer of the stomach F N G STARR Canadian M Am J 19, 3, xlii, 24 [313]

- Ulcerated carcinoma and carcinomatous ulcer simulating round ulcer E DARR LIXSON Acta med Scand 9, 2, lvi, 34 [314]

- The diagnosis and treatment in case of cancer of the stomach J A SELL MACKENZIE Med Press, 92, cxv, 9

- Carcinoma of the stomach in association with positive blood Wassermann and the history of chancres T G SCHWABER Med Clin N Am 9, 2, vi, 901

- Case of partial gastrectomy for cancer of the stomach R P ROWLANDS Proc Roy Soc Med Lond 92, xvi, Cio Sect

- Carcinoma of the stomach partial gastrectomy H S McKEAY Surg Clin N Am 92, ii, 35

- Intestinal reaction to erythema dose C L MARTIN and F T ROBERTS Am J Roentgenol 92, x,

- The anatomy of the lymph vessels of the small intestine
O C AAGAARD Zschr f Anat Ent schlungsgesch 923 liv 30
- Postoperative obstruction of the small intestine I J Walker Surg Clin N Am 923 n. 145 [314]
- Less than a prophylaxis of patent omphaloenteric duct B BRAUN Nederl maandschr geneesk 923, 21, 143
- Acute intestinal obstruction P H BURTON J Lancet, 1923 xlv, 31
- Acute obstruction resection of gangrenous loop ileocolostomy F W BAILEY Surg Clin N Am 9 24, 65
- Report of case of obstruction of the intestines due to an ascus W P BARNES J Am M Ass 923 lxxx, 8
- Chronic duodenal ileus D P D WILKIN Brit M J 923, 2, 9
- Chronic duodenal obstruction—etiology, symptoms and treatment E P QUAIN N York M J & Med Rec, 923, cxvi, 65 [314]
- A substitute for duodenal drainage C E HERRINGTON Ohio Stat M J 923, xii, 33
- Abnormalities of the duodenum J H ARMSTRONG Brit J Surg 9 3, 316
- Congenital anomaly of the duodenum with the formation of diverticula H SCHAEFER Fortschr d Geb d Röntgenstrahlen, 923, xxxi, 776
- Case of duodenal ulcer to illustrate certain points in diagnosis H S SCOTTIER Proc Roy Soc Med Lond 923, xvi, Clin Sect, 5
- Duodenal ulcer J S HORSLEY Surg Clin N Am 923, 2, 217
- Recurrent duodenal ulcer L DAVIS Surg Clin N Am, 923, 2, 947
- Chronic duodenal and gastric ulcer diagnosis D MACRAE, JR. J Lancet, 1923, xlv, 26 [315]
- The treatment of duodenal ulcer H S WILLSON Minnesota Med 9 3, vi, 6
- Repair of duodenal perforation, cholecystostomy for gall stones F W BAILEY Surg Clin N Am 923, 2, 945
- Gastrostomy Inoperable cancer of the stomach F W BAILEY Surg Clin N Am 923, n. 1640
- The surgical complications of trichoccephalus and oxyurias infection ASPENHURST Klin Wchschr 923, 1, 74
- Tuberculosis of the intestine the ulcerative form as phase of pulmonary tuberculosis D A STEWART Can Adm M Ass J 923 xii 20
- Cases of perforation of the bowel and rupture of the heart D FRANK Glasgow M J 923, xlvii, 9
- Acute intestinal obstruction caused by fecal impaction in Meckel's diverticulum R B HERTZMAN and D M BURR J Am M Ass 923, lxxx, 30 [315]
- A review of the roentgenological consideration of the appendix A J QUINCY Internat J Surg 1923 xcvi, 9 50
- Appendicitis M G SULLOZ Surg Clin N Am 923, 153
- Appendicitis H L NORTHBROOK Hahnemann Month 923, lvm, 6
- Appendicitis and appendiceal colic R D LONO J Oklahoma State M Ass 9 2, xvi
- Tumors and appendicitis C J G T YLOR Brit M J 923, 1, 7
- The relation between appendicitis, oxyurias vermicularis, and local constipation in the appendix all E H EASTWOOD J Path & Bacteriol 9 3, xxvi, 69
- Acute appendicitis A S RUSSELL J Oklahoma Stat M Ass 9 3, xvi, 5
- Acute appendicitis in children M E STOUT J Oklahoma Stat M Ass 923, xvi, 4
- Intestinal obstruction following acute appendicitis and peritonitis P F McFARLAN Brit M J 9 3, 6 [316]
- End results of 500 cases of chronic appendicitis statistical study J B DRAVER and I S RAYNER Arch Surg 923, vi, 3
- The roentgenological aspect of chronic appendicitis H K PANCORR Arch Surg 9 3, vi, 85
- A case of cystic appendicitis OUDARD Bull et mêm Soc de chir de Par 923 lxxvi, 99 [316]
- The treatment of appendicitis T KORCOWSKI Polska gaz lek 9 4, 685
- Treatment of acute suppurative appendicitis T J BROMBERG Internat J Surg 9 3, xcvi, 6
- Hemorrhage following abdominal operations, with special reference to appendectomy and excluding bleeding from the stump C H PRINCE Surg Gyneec & Obst, 9 3, xcvi, 80 [316]
- Inguinal hernia on the right side following appendectomy OUDARD and JEA J de chir 923, xi, 534 [317]
- Residual appendicular abscesses after the removal of the appendix opening in the bladder by the subperitoneal route HOFFER Lyon chirurg 923, xii, 56 [317]
- End to end intestinal anastomosis an experimental study D V THURGOOD Northwest Med 923 xiii, 27 [317]
- Intestinal obstruction from hydronephrosis in pelvic kidney H T M KERR Brit J Surg 9 3, 4, 471
- An unusual case of malformation of the colon W Ho v klin Wchschr 923, 1, 14
- A case of epilepsy with emproloma (Hirschsprung's disease) and polyoma E B BLOCK South M J 923, xvi, 5
- Hirschsprung's disease brief review of the literature with report of six cases M S RICHARD, L M SILVER and W C A SMITH Arch Pediat 923, xl, 40
- The first and last link W A LACE Practitioner 9 3, cx 33
- Diverticula of the colon J T ROGERS Minnesota Med 9 3, vi, 35
- A modification of the John Young Brown operation for treatment of chronic ulcerative colitis with report of cases E H MIRANZO and W THALHEIMER Wisconsin M J 9 3, xii 36
- Carcinoma of the colon J PHILLIPS Ohio Stat M J 9 3, xii, 7
- Cancer of the colon G W CHILL Ohio State M J 9 3, xii 5
- Scirrhus carcinoma of the splenic flexure resection lateral anastomosis L D VES Surg Clin N Am 923, 2, 955
- Annular carcinoma of the rectosigmoid causing obstruction, resection with end to end suture L D VES Surg Clin N Am 9 2, n. 951
- T cases of ruptured sigmoid colon R M HAYDEN-JONES Brit J Surg 923, x, 4 5
- The sigmoid adhesion H A ROTTERBY Surg Clin N Am 9 3, 2, 28
- Diverticula of the sigmoid W D HAGGARD Surg Clin N Am 9 3, 2, 95
- The treatment of anus praeternaturalis by pelvic recto-sigmoidostomy J HOSKINAY Zentralbl f Chir 923, xiv, 658
- Methods to obtain continence in the artificial anus G BARNES Polyclin, Rome, 923, xxxi set chir 607
- The rectum C G W RHO Practitioner 9 3, cx, 51
- A case of subcutaneous emphysema due to pneumatic rupture of the rectum P J FRYEDA Boston M & S J 9 3, cxviii, 5

The injection of alcohol in the treatment of prolapse of the rectum in infancy and childhood. L. FREUDY and J. B. D. GARDNER. Lancet, 1923, cxxv, 76.

Late syphilis of the rectum. DREYER. Am J Clin Med 9, 3, xxx, 36.

Constrictor structure of the rectum. C. SYMONS. Proc Roy Soc Med Lond 1923, xvi, Sect Surg, 3.

Imperforate anorectal junction—late operation upon the twenty sixth day. G. J. KAY. Bull et memo Soc anat de Par 9, 1, xxi, 37.

Some low-grade anal infections. E. H. TINKELL. Internat J Surg 1923, xxvii, 3.

An aseptic focal abscess as applied to the anal region. E. G. MAIR. N York M J & Med Rec 1923, cxviii, 90.

The technique of colon irrigation. O. B. SCHILLERS. Internat J Surg 1923, xxvii, 8.

Liver, Gall Bladder, Pancreas, and Spleen

The removal of a retention cyst from the liver. J. F. X. JONES. Ann Surg 1923, lxxviii, 66.

Abscess of the liver, resection of the ninth rib, absence of adhesions, transpleural operation. F. W. PARKMAN. Surg Clin N Am 1923, vi, 1395.

A tumor springing from the under-surface of the liver. H. A. KOTTER. Surg Clin N Am 1923, vi, 391.

Primary carcinoma of the liver. F. HILFERTING. J Cancer Research 1923, vi, 309.

Studies in gall bladder pathology. W. BOYD. Brit J Surg 1923, x, 337.

Cholecystitis, cholecystectomy, operative injury to the main bile duct, primary end-to-end anastomosis, postoperative stricture of the duct, hepaticoduodenostomy, recurrence of the stricture, second hepaticoduodenostomy over rubber tube. J. T. BROWNE. Surg Clin N Am 1923, vi, 397.

Cholelithiasis, cholecystitis, and cholangitis. A. B. KOTER. Ann Surg 1923, lxxviii, 53.

The etiology of gall-stones. S. F. OLIVER. J Lab & Clin Med 1923, viii, 24.

Cholelithiasis and intrathoracic gall-stones. M. G. SELLIS. Surg Clin N Am 1923, vi, 349.

Experiences with non-surgical drainage of the gall bladder. J. MYRNE. Illinois M J 1923, xliii, 47.

The gall bladder surgically considered. H. CORRE. N York M J & Med Rec 1923, cxviii, 97.

Certain aspects of surgery of the gall bladder. O. F. LAMORE. Ann Surg 1923, lxxviii, 64.

Cholecystectomy. G. HOOVER. Canadian Pract 1923, xlviii, 19.

Cholecystostomy versus cholecystectomy. J. C. O'DA. Ann Surg 1923, lxxviii, 48.

Pre-operative preparation of patients with obstructive jaundice: end-results in thirty-four cases. W. WALTERS. Minnesota Med 1923, vi, 3.

Primary closure of the abdominal wall in operations on the biliary ducts, with special consideration of strabismic operations on the stomach and duodenum. P. WALTERS. Wisconsin Arch f Clin Med 1923, cxi, 347.

Congenital cyst of the common bile duct, with report of two cases. J. MONTGOMERY. Brit J Surg 1923, x, 473.

A method for the permanent sterile drainage of intra-abdominal ducts, as applied to the common duct. P. REED and P. D. McMASTERS. J Exper Med 1923, xxxviii, 124.

The bile factor in pancreatitis. F. C. MARY and A. S. GEORGE. Arch Surg 1923, vi.

Acute pancreatitis. D. F. JONES. Surg Clin N Am 1923, vi, 5.

Acute hemorrhagic pancreatitis: round worms in pancreatic duct. H. M. RICHY. Brit J Surg 1923, x, 419.

Necrosis of the pancreas, case of total suppurative. L. KRAUT. Wochenschr 1923, xxi, 687.

Partial obstruction of the pancreatic duct by stones. M. MORRIS. Brit J Surg 1923, x, 4.

Surgery of the pancreas: the diagnosis and treatment of primary carcinoma of the pancreas, particularly of the body and tail of the gland. J. I. GUTZ. Westch Clin program abstract, 1923, 3.

Discussion on the surgical treatment of non-traumatic affections of the spleen. J. CANNELL and E. H. KETTLER. K. DALLER. Brit M J 1923, vi, 304.

A case of chronic purpura hemorrhagica with therapeutic splenectomy. B. D. BOWEN. Bull Buffalo Gen Hosp Buffalo, 1923, 1.

A case of funereal hemolytic icterus associated with pulmonary tuberculosis and old tuberculosis of the liver. L. A. GRAMER. Surg Clin N Am 1923, vi, 483.

Sarcoma of the spleen. W. D. HADGARD. Surg Clin N Am 1923, vi, 393.

Miscellaneous

Visceral adhesions and bands: normal incidence. J. BRYANT. Am J M Sc 1923, clvi.

Torsion of the greater omentum. M. A. McIVER. Boston M & S J 1923, cxxviii, 65.

Torsion of appendices epiploicae, with report of case. S. O. BEACH. South M J 1923, xvi, 35.

Mesenteric vascular occlusion. L. BRAY. Arch Surg 1923, vi, 3.

The fundamental cause of splenchoptosis. A. C. VICTOR. Bull Lying In Hosp City of N York, 1923, xii, 39.

Migratory tumors of the abdomen. A. W. COLLIER. N York M J & Med Rec 1923, cxviii, 65.

Retroperitoneal cysts, with report of a case. J. K. SCHROEDER. South M J 1923, xvi, 34.

Intrapertoneal abscesses. S. M. SMITH. J Roy Army Med Corps, Lond xl, 53.

Subphrenic abscess. W. D. HADGARD. Surg Clin N Am 1923, vi, 399.

Pelvic abscess following suppurative appendicitis: drainage through the rectum. M. BRADSHAW. Surg Clin N Am 1923, vi, 353.

A safe method for the drainage of intra-abdominal abscesses. J. R. EASTMAN. J Indiana State M Am 1923, xvi, 6.

Two unusual acute abdominal conditions. H. K. POWELL. Med J Australia 1923, i, 67.

Two interesting abdominal cases. A. L. CLIFTON and F. R. HOOK. U S Naval M Bull 1923, xviii, 8.

Freezing wounds of the abdomen. W. M. BELLECK. Am J Surg 1923, xxviii, 3.

Some surgical emergencies with special reference to the abdominal region. D. POWELL. Practitioner 1923, cx, 90.

A pelvic hematoma in male unsected until infected from the intestine. W. G. SYMONS. Brit J Surg 1923, x, 473.

SURGERY OF THE EXTREMITIES

Conditions of the Bones, Joints, Muscles, Tendons, Etc

- Bones and joints J L. THOMAS Practitioner 923, 40
- The diagnosis and treatment of bone lesions: brief summary of the salient features J C BLOOMGOOD Ann J Roentgenol 19 3, 4. [330]
- The traumatic new formation of bone (myositis ossificans and periosteal bone cysts) WIGLAW Beitr klin Chir 927, 437, 432 [331]
- Bone cysts (osteitis fibrosa) variety—polycystic osteitis fibrosa J C BLOOMGOOD J Radiol 9 3, 14. [332]
- Defects in the membranous bones, diabetes mellitus, and encephalomalacia, with report of case L C GROSS and J L STEIN Arch Int Med 923, 333, 76
- Some observations on the causes and prevention of rickets E L THURSON Colorado Med 9 3, 22.
- Osteomalacia etiology and report of case occurring in an tubercle with psychosis N A D TON Boston M & S J 923, 423, 424.
- Bone diseases—osteoporosis or hypomastia from fracture and non-union J C BLOOMGOOD J Radiol 9 3, 14, 538 [332]
- Osteomyelitis report of case with roentgenograms of eleven different fractures in the same patient D M GLOVER Arch Surg 9 464 [332]
- Osteosarcoma (osteosarcoma) granulosa, Mammotomochon Albers-Schönberg disease G G DIAZ Arch Surg 922, 449 [333]
- A case of congenital osteosarcoma R K GOSWAMY Bull Johns Hopkins Hosp Balt 9 333, 444 [334]
- The pathology of osteitis deformans, Paget's disease S M COV J Bone & Joint Surg 923, 14 751 [335]
- Osteitis deformans in monkeys E P C WHITE Arch Int Med 9 4, 333, 700 [334]
- Osteochondritis dissecans A H FRIEDBERG J Bone & Joint Surg 923, 333, 3 [334]
- Acute osteomyelitis in children, report of cases J C WILSON and J C WILSON J N Orleans M & S J 923, 333, 337
- Suppurative osteomyelitis due to the colon bacillus N WILKINSON Ann Surg 922, 333, 605 [334]
- Aluminum potassium nitrate in the treatment of suppurative conditions, particularly osteomyelitis M TWO Arch Surg 923, 333, 33 [334]
- Tuberculosis of the bones and joints D P WILLARD Pennsylvania M J 923, 333, 30
- The pathological-anatomical bases of traumatic tuber coloma H VON STEINBERG Schweiz med Wochenschr 922, 333, 303
- Tumors of the parathyroid gland in cases of multiple giant-cell sarcoma of the osseous system B GUTENBERG Frankfurt Ztschr f Path. 9 333, 305
- Syphilis of the bones and joints B F BLEVY Pennsylvania M J 923, 333, 3 [334]
- Tumors of bone J E THOMPSON Surg Clin N Am 923, 333, 3 [334]
- Bone tumors, metastases to the lungs from pure sarcoma J C BLOOMGOOD Ann Surg 9 3, 333, 3 [335]
- Multiple myeloma O S HANSEN J Am M J 923, 333, 3 [335]
- Glass tolerance in chronic arthritis and allied conditions O L K. PRINGLE and S MILLER Lancet, 923, 333, 3 [335]

- The arthritis of serum sickness R H BOOTS and H F SWIFT J Am M Ass 9 3, 333, 3
- Forms of tuberculous arthritis and their treatment E WARD Lancet, 923, 333
- Infected Charcot joint, not at first recognized as such, treated by the Williams method F W FARRAM Surg Clin N Am 923, 333, 30
- The importance and function of the teres minor muscle D M GROSS Edinburgh M J 923, 333, 6
- Osteochondroma of the scapula N ALLHOV Surg Clin N Am 923, 333, 54
- Minor traumatic disabilities of the upper limb P J VERRALL Brit M J 923, 333, 97
- Fibrositic disease of the upper end of the humerus C P G WICKLEY Arch Radiol & Electrotherapy 9 3, 333, 24
- A case of solitary cyst in the humerus A P BROW Edinburgh M J 922, 333, 306 [335]
- Hyphal elbow A B K W TERN Brit M J 9 3, 333, 3
- A large myeloid sarcoma of the radius in which the tumor was whit throughout M J STEWART Brit J Surg 923, 333, 3 [335]
- Brachydactyly due to congenital shortening of the metacarpals G JEAN Rev dorthop 9 333, 333 [336]
- A case of multiple exostoses and hip disease C F SMITH Proc Roy Soc Med Lond 9 3, 333, Clin Sect
- Sarcoma (?) of the thigh, with secondary sarcoma (?) of the regional lymph nodes and bones recovery after intensive deep roentgen irradiation J H SCHROEDER J Am M Ass 923, 333, 33
- Disturbances of the knee joint M A BERNSTEIN Illinois M J 923, 333, 30
- Chronic non-inflammatory lesions of the knee joint M S HENDERSON Arch Surg 9 3, 333, 3 [336]
- Flat or oak feet in children S KLEINSTEIN Arch Pediat 923, 333, 3
- Sclerotic neuritis and its relation to flatfoot W MARTIN Ann Med 923, 333, 30 [337]
- Isolated disease of the scaphoid B W MORRIS J Am M Ass 923, 333, 3 [337]
- Congenital elephantiasis of the toes H S TRATCHER and T WICKLIDON J Bone & Joint Surg 923
- Case of bilateral hammer great toes A E M WOOLF Proc Roy Soc Med Lond 9 3, 333, Clin Sect
- Sports injuries F ROSS Practitioner 9 3, 333, 30

Fractures and Dislocations

- Outline of treatment of fractures syllabus adopted at the Boston Conference, April, 9 Arch Surg 9 3, 333, 3
- The modern treatment of fractures and dislocations C EWALD Wien klin Wochenschr 9 333, 333, 3
- Ultra violet radiation in the treatment of fractures A J PACTON Am Med 9 3, 333, 301
- Management of fractures J A CALDWELL Cincinnati M J 923, 333, 3
- Some notes on the treatment of fractures W A LANE Lancet, 923, 333, 3
- A five year survey of the routine treatment of fractures by operative methods A YOUNG Brit M J 923, 333, 3 [338]

- The temporary plating of fractures of the long bones
O H ELLIOTT. *Brit M J* 1922, 2, 4 [332]
- Fifty two cases of acetabular osteomyelitis from recent
fracture and closed prosthesis of the heads
M CHARNOVITZ. *Arch franco-belges de chir* 1922, xiv 904
- The treatment of ununited fractures W C CAMPBELL
Am J Surg 1922, xxxvii, [339]
- The treatment of ununited fractures by bridge grafts
D DUFF. *Brit M J* 1922, 2, 215 [339]
- Recurrent dislocation of the shoulder J A HARTWELL
Ann Surg 9, 3, lxxvii, 8
- Fracture-dislocation of the humeral head W V
HOCK. *Boston M & S J* 9, cxxxviii, 960 [340]
- Congenital bilateral forward location of the head of the
radius M CHURCHMAN. *Rev d'orthop* 1922, xxix
549 [340]
- A series of injuries to the rat. P MOUTON-ORRIST
Bull et mém Soc anat de Par 1922, xcii, 407
- Dislocation of the sesamoid carpal bone H B KAYE
J Am M Ass, 92, lxxx, 19 [340]
- Fractures of the carpal scaphoid A F TILLY. *J
Lancet* 1922, xliii, 8
- The treatment of congenital dislocation of the hip
C H BLANDFORD. *J Bone & Joint Surg* 1922, xxi, 76
[341]
- Three cases of early location during the course of cox
algia. P TILLY and J VIZ. *Bull et mém Soc anat
de Par* 1922, xcii, 43
- Two cases of healed fracture of the acetabulum in la
location of the hip. E CHUTTY and L HAYDEN. *Rev
d'orthop* 1922, xxix, 543 [341]
- Fracture of the femur M BRADSHAW. *Surg Clin
N Am* 1922, li, 34 [342]
- Fracture of the patella F W PARKMAN. *Surg Clin
N Am* 1922, li, 307 [342]
- Injured patella E D MARTIN. *Surg Clin N Am*,
1922, li, 1469 [342]
- Anterior and lateral subtrochanteric location C BLOCH
and L VIGNON. *Bull et mém Soc anat de Par* 9, 2, xxi,
354 [342]

Surgery of the Bones, Joints, M. actes, Tendons, Etc.

- Some important points in bone surgery A WATKINS
J Arkansas M Soc, 1922, xix, 45
- Bone grafting W R ADAMS. *Surg Gynec & Obst*
1922, xxxvii, 97 [342]
- Observations on the correction of deformities of long
standing A WATKINS. *J Am M Ass*, 1922, lxxx, 8 [342]
- A new autoclave P MONTESINO. *Ztschr f orthop
Chir* 1922, xlii, 4
- Emerson's fore and the fore- and after treatment
A GOTTLIEB. *California State J M* 1922, xxi, 70
- Tendon reconstruction M BRADSHAW. *Surg Clin
N Am* 1922, li, 363 [342]
- The efficient treatment of acute and chronic, simple,
traumatic synovitis (hemarthrosis and hyarthrosis)
by repeated aspirations and moderate active mobilization

without splinting C A McWILLIAMS. *Ann Surg* 1922,
lxxvi, 677 [342]

The choice of the site for amputation with reference to
prosthesis H A ALBRECHT. *Verhandl d Russ Chir
Petrograd Ges Petrograd* 1922.

The development and aims of amputation technique
J ZAKHAROVICH. *Casop Mlékár* 9, 2, lxi, 906

A method of facilitating plastic operations on the deformed
muscle F LAMBERT. *Zentralbl f Chir* 9, 2, xlv, 106

The Krackhammer arm J FRANKEL. *Zentralbl f
Chir* 1922, xlii, 793

Resection of the distal end of the ulna for shortening of
the radius following fracture C HOGAN. *California Stat
J M* 9, 2, xxi [343]

Transplantation of the tensor fasciae lata in cases of
weakened gluteus medius A T LEROY. *J Am M Ass*
1922, lxxx, 542 [343]

The end result in four cases of severe destructive injury
to the hip T S MERRILL. *J Bone & Joint Surg* 1922,
xxi, 70 [344]

Muscular hernia through the anterior compartment of
the right thigh with loss of spongy substance following
war wound radical cure by the use of perineal flap

BOTKELOV. *Bull et mém Soc anat de Par*
1922, xcii, 374 [344]

Case of myeloma of the outer condyle of the femur
showing the result of bone grafting A H TOSCO. *Proc
Roy Soc Med Lond* 1922, xvi, Chir Sect 3

Plastic restoration of the collateral ligament in
loose knee R BOWY. *Arch f klin Chir* 9, 2, cxx, 757

Knee lesions and operations based on 100 personal cases
F J COTTON. *Surg Clin N Am* 9, 2, li, 97 [344]

Report of the commission appointed by the American
Orthopedic Association for the study of stabilizing opera
tions on the foot A G COOK, W G STURDY and E W
RYLANDER. *J Bone & Joint Surg* 9, 2, xxi, 35 [344]

Primary resection of the astragali and both scaphoid
G MONTAGNA. *Arch franco-belges de chir* 1922, xiv 505

Plastic operations on the joint for the correction of
bilateral valgus E HETTMANN. *Zentralbl f Chir* 9,
xlii, 1067 [344]

New treatment of flat-foot J ZACHRY. *Polska gaz lek*
1922, 4, 447 [344]

Orthopedics in General

Speech development in orthopedic cases C O STYLLA
California State J M 1922, xxi, 4

The purpose and structure of the orthopedic congress
H A ALBRECHT. *Verhandl d Russ Chir Petrograd Ges
Petrograd* 1922

The chemical treatment of tuberculosis at the orthopedic
institute of Petrograd WARDEN. *Verhandl d Kong
Russ Chir Petrograd*, 1922

Judging actual and apparent shortenings and lengthen
ings of the lower extremities. R DRACHTER. *Arch f
orthop Unfall Chir* 1922, xxi, 8

The future of orthopedic surgery in the South W B
OWEN. *South M J* 1922, xvi, 3

SURGERY OF THE SPINAL COLUMN AND CORD

- The treatment of painful affections involving the cer
vical vertebrae H L LOWENSTEIN. *California State J M*
1922, xxi, 2 [347]
- Lateral mobilization of the third cervical vertebra on the
fourth GERTZ. *Arch franco-belges de chir* 1922, xiv
539 [347]
- Location fracture of the cervical spine E VANDERPUT
Arch franco-belges de chir 1922, xiv 547 [348]

Sacrification of the fifth lumbar vertebra in various
lumbar cases and in ankylosed spines V LUCIEN and
FLEBO. *Bull et mém Soc anat de Par* 1922, xcii, 187

Fracture of the sixth cervical vertebra W P BRAD
SHAW. *Surg Clin N Am* 9, 2, li, 377

Isodiametric vertebrae (Schäfer) and its anatomical
bases J HALL. *Arch f orthop Unfall Chir* 1922,
xxi, 57 [347]

- The place of operations for spinal fixation in the treatment of Pott's disease G R GIBBLETTON *Brit J Surg* 923, 2, 37 [348]
 Osteomyelitis in Pott's disease J CALLE and M GALLAND *J de chir* 922, 22, 555 [349]
 A proposed operation on the cervical column V HOFFMANN *Zentralbl f Chir* 9 xlii 1445
 Operation as part of the conservative treatment of Pott's disease W I C WHEELER *Practitioner* 9 cix 34 [349]
 Ureth operation KOK KW *Verhandl d Kong Russ Chir Petrograd*, 19

- Ankylosing spondylitis L SONDERHANSSEN *Polska gaz lek* 92 1, 573
 Inflammation causing ankylosis of the cervical H HACHENBERG *Ztschr f aenzl Fortbild* 9 2, 212, 59
 Crush fractures of the spine J O WALLACE J Bone & Joint Surg 9 3 xxi 18 [349]
 Fractures of the spine with cord involvement W J MEXTER J Bone & Joint Surg 923 xxi
 Report of an unusual case of typhoid spine with symptoms of spinal cord affection H TURER *Brit M J* 9 3, 14

SURGERY OF THE NERVOUS SYSTEM

- A traction lesion of the right brachial plexus involving the fifth and sixth groups A F M WOOLY *Proc Roy Soc Med Lond* 9 3, xvi, Clin Sect
 Brachial neuritis due to cervical ribs W W AGHAM and J PHILLIPS *Brit M J* 923, 4, 39
 Injury of the nerves of the arm H URBANOWSKI *Ungk f Leger* 9 lxxxix 925 [350]
 Calcareous deposits in the posterior spinal roots of the aged L MARCHAND *Bull et mèm Soc anat de Par* 19 2, xxi, 404

- The indications for posterior rhizotomy based on twenty-five cases R LEROUX *Lyon chirurg* 9 xix 647 [350]
 Contributions to the surgery of the sympathetic nervous system J J A Spitalnik 9 xli 3 [350]
 Complete rupture of the acoustic nerve in subcutaneous fracture of the femur H LOWMEYER *Arch f orthop Unfall Chir* 9 xvi, 97
 Sciatic phlebalgia and sciatica O KLEINSCHMIDT *Klin Wchnschr* 9 2, 1, 730 [351]

MISCELLANEOUS

- Clinical Entities—General Physiological Conditions
 Endocrine balance M L S VINE J *Missouri Stat M Ass* 9 3, xi, 14
 The positive achievements of endocrinology A S BURCHARDT *Endocrinology* 9 vi 8
 The treatment of shock S LERICHE *Internat J Surg* 9 3 lxxvi, 7
 Diabetes mellitus (collective review) *Med Sc Abs & Rev* 923, vi, 355
 Influence of infections on carbohydrate tolerance in diabetes mellitus R A KIRK *Med Clin N Am* 9 3, vi, 553
 A case of papulomatosis of an abscess cavity W KRAUS *Ztschr f Path* 9 xxviii, 59 [351]
 The tumor problem and studies regarding epithelial growth H BURCHARDT *Munchen med Wchnschr* 92 lxx, 365
 The cancer patient and the family physician: obligation to know F FRIEDRICH *Canadian Pract* 923 xlviii, 7
 Cancer research and its needs J BROWN *Med Press* 923 cxi, 7
 Multiple pathology and the family physician W S BURCHARDT *Illness M J* 9 3 xliii 30
 Is there any relationship between the development of cancer and the nerves C S FUGEL *Ztschr f Krebsforsch* 923 xix, 5
 Basal-cell carcinoma of the skin J S HORSLEY *Surg Clin N Am* 9 3, ii, 247
 Colloid carcinoma D PARRAN *Ann Surg* 9 3, lxxvii, 90
 An experimental study on the question of the development of cancer from sea urchin tar H JOHNS *Ztschr f Krebsforsch* 19 xxi, 39
 Parathyroid hyperplasia and bone destruction in generalized carcinomatosis P KLEINER *Surg Gynec & Obst* 923, xxvii
 The electrolytic fixation of carbon-colloidal substances on embryonic and neoplastic cells and its importance in the

- diagnosis and treatment of cancer E WASSNER *Bull Acad de mèd Par* 9 lxxviii, 146 [351]
 The course of mortality from cancer in Baltimore W T HOWARD *J Am M Ass* 923, lxxv, 7
 A transplantable metastasizing chondro-rhabdomyosarcoma of the rat F D B LLOYD and M R C BATES *J Cancer Research* 9 2, ii, 9 [352]

Sera, Vaccines, and Ferments

- Symptoms of anaphylaxis following the prophylactic subcutaneous injection of tetanus antitoxin J ANDERSON *Zentralbl f Chir* 92 xlii, 609

Blood

- The control of the circulation G KEMPT J I State M Soc 9 3 xix
 The blood pressures of healthy men and women B S JONES *J Am M Ass* 9 3 lxxv, 3
 Biochemical analyses of the blood and its theoretical and practical interpretation R SARRADA *Bull Porto Rico M Ass* 9 xvi, 239
 Some effects of exposure to radium on the blood platelets J C MOTTREAU *Proc Roy Soc Med Lond* 9 3, xvi, Sect Path 6
 The changes in the physicochemical structures of the blood plasma with accelerated sedimentation of the blood cells following treatment with uricants, surgical operations, and diseases W LOYER and H LOYER *Ztschr f d exp Med* 9 xlii, 39 [352]
 The catalase content of the blood in carcinoma ZERNER *Ztschr f Krebsforsch* 9 2, xix 363
 Embolism of the right brachial artery in lobular pneumonia A H D BATES *Brit M J* 9 3, 1, 3
 Thrombosis of the superior mesenteric artery THURTELL and CHAVE *Bull et mèm Soc anat de Par* 9 2, xxi, 406
 Chills following transfusion of blood R LEWISON *J Am M Ass* 9 3, lxxv, 247

Blood and Lymph Vessels

- The structure and topography of the blood vessel trunks
Verhandl d Kong Ross Chw Petrograd, 92
- Contributions to the anatomy of the capillaries
The contractile elements in the walls of the blood capillaries
B Verduy Zischl Anat East aschlongesch
9, iv, 30
- Arterial hypertension L S Miller J Missouri State
M Am 19 3, 22
- Two cases of aneurysm B Brooks Surg Clin N
Am 9 2, 11, 657
- Aneurysm of the aorta, with remarks concerning the
effects of aneurysm on the coronary circulation R G
Torrey Med Clin N Am 9 3, vi, 96
- A case of "aneurysm dissecans" of the aorta (rupture
of the aorta with an intraluminal hematoma) B Roman
Bull Buffalo Gen Hosp Buffalo, 9 3, 1, 37
- Aneurysm of the hepatic artery J Friedmanwald and
K H Tan Evans Am J M Sc 9 3, div,
- Right popliteal aneurysm M Bradburn Surg Clin
N Am 9 2, 335
- Three cases of arterial embolocysto E Michailov
Acta chirurg Scand 9 3, iv, 487
- Arteriovenous fistula of the femoral vessels (aneurysm
in) on level with the origin of the profunda [352]
- Matas Surg Clin N Am 9 2, 11, 65 [352]
- Note on adhesions of the left common iliac vein K
Okamoto Goto and Japan, 922, 4, 05
- Arterial decalcification C L Callander Ann Surg
9 3, lxxvii, 5
- Periarterial sympathetomy A E Halstead and
F Christopher J Am M Am 9 3, lxxx, 73
- Periarterial sympathetomy E P Lerma Ann
Surg 923, lxxviii, 30
- The technique of periarterial sympathetomy and
some new indications R Larcher Presse med Par
922, 28, 05
- Perivascular leucocytosis in the early stages of thrombo-
angiitis obliterans H M Thomas Am J M Sc 9 3,
div, 86
- The significance of lymphatic involvement in infections
W J Mayo J Am M Am 9 3, lxxx, [354]

General Bacterial Infections

- Electro localization of the streptococcus-pneumococcus
group factor in the production of disease F C Ross
Ann Clin Med 923, 4
- Tetanus report of 6 cases at the Massachusetts
General Hospital R H Miller Surg Gynec & Obst
9 3, lxxvi, 90
- A case of tetanus without evident source of infection
G W Gooker and C M Rantz Med Press, 923,
civ, 73
- A case of tetanus, with comment J O'Keefe Proc
Littor 9 3, 28, 06
- Infection due to the bacillus Eberth Gaffky ulcers
intestinal disease E W Moscovitz Arch Klin
exp Med 922, 4, 05

Surgical Diagnosis, Pathology and Therapeutics

- A simple method for calculating the basal metabolic rate
R L Haden J Lab & Clin Med 9 3, viii, 27
- The symptoms of vertigo H H Varr Cincinnati
J M 923, 2, 420
- The fractional test meal method of Rikhsa crum the
single test meal of Ewald M Cohen N York M J &
Med Rec 923, cxviii, 94

- The relative value of some of the commonly used methods
for the detection of occult blood in the stool H A Res-
man J Lab & Clin Med 923, vii, 305
- Combined caetero and hucher puncture an aid in the
diagnosis of compression of the spinal cord J B Ayra
J Bone & Joint Surg 9 3, 8
- The clinical value of the pathologist W C Mac
Carty Ann Clin Med 923, 1, 70
- Practical surgical pathologic observations and deduc-
tions A C Brooks J Am M Am 9 3, lxxx,
04
- Surgery for the tuberculous H G Waterhouse J Am
M Am 923, lxxx, 6
- Postoperative treatment J Selverick Am J Surg
923, lxxvii, 6
- Medical management in the postoperative care of
abdominal cases J T Fotheringham Canadian Pract
9 3, xlviii, 8
- The reverse selectin bacteriostatic action of acid
feces J W Chruschman J Exper Med 923, lxxvii,
[356]
- Further clinical experience with insulin (pancreatic
extracts) in the treatment of diabetes mellitus F G
Bartino, W R Campbell, and A A Fletcher Brit
M J 923, 1, 8 [356]
- Treatment by diathermy W J Turrell Brit M J,
9 3, 4, 143 [357]
- Experimental Surgery and Surgical Anatomy
- The accommodation in the peritoneal cavity of givos
subjected into the case L Torrance Riforma med
923, lxxviii, 305 [357]
- Heteroplastic transplantation of spleen of adult frog
skin R Gansel Deutsche med Wochenschr 9 3, lxxvii,
63 [357]
- The topography of the nerves of the brachial plexus and
axillary vessels at their entrance into the subclavicular
space E Olvitz Presse med Pa 922, 28, 06 [358]
- Anatomical, experimental, and clinical investigations
concerning the phrenic nerve and the innervation of the
diaphragm W Felix Deutsche Zischl f Chir 19
cxvii, 263 [358]

Roentgenology and Radium Therapy

- The effect of the war on the development of roentgenol-
ogy P M Hickey Am J Roentgenol 9 3, 4, 70
- A note on the use of the Bucky Potter diaphragm with
the fluoroscope W C Al Arer Am J Roentgenol
9 3, 4, 60
- An automatic switch for Bucky diaphragms E V
Forsell Am J Roentgenol 923, 07
- The principles of stereoradiation J B W. Jr J Radiol
922, iv, 0
- The demonstration of occulted Hutchinson teeth by
the roentgen ray J H Stokes and B S Gardner J
Am M Am 923, lxxx, 28
- Radiotherapy as an independent specialty R Lorenz
Prog de la Clin Med, 922, cxv, 360
- Recent advances in X ray therapeutics R Morton
Canadian Pract 9 3, xlviii, 25
- Bismut plaster walls for X-ray treatment cabinets
A E Bancel Arch Radiol & Electrotherapy 9 3,
lxvii, 34
- The problem of ray dosage W Friedman Am J
Roentgenol 923, 5, 0
- A summary of the determination of X ray intensities
H Scherz J Radiol 923, iv [359]

A new investigation of the problem of roentgen ra-
diation measurements. G. FAIRLIE. *Am J Roent*
1934 10 3, 43. (346)

A simple method of treating superficial lesions of the
genitourinary and intrapelvic conditions from below. M. R. J.
H. *Arch Radiol & Electrotherapy* 1933 xiv 42.

The relation of radiology to cancer control. T. A.
Gibson. *South M J* 1933 xvi.

Radiation therapy in malignancy. J. D. Gibson. *Am
Med* 1933 xiv 4, 649.

Deep X-ray therapy for inoperable anal canal disease.
H. J. Hax. *Med J Australia* 1933 6.

Deep X-ray therapy: the technique of the Erlangen
Clinic. W. Pflüger. *Lancet*, 1933, cccv 5.

The new way for the new higher voltage shorter wave
length roentgenotherapy. J. T. Street. *J Med Soc N
Jersey* 1933, ix 9.

The problem (high potential measurements) associated
with roentgenotherapy (high voltages). R. K. St. J. *Radiol*
1933, ix 15.

The necessity for caution in the employment of high
voltage roentgen rays in therapeutic great glands.
R. K. St. J. *Med J Australia* 1933 6.

The use of roentgen rays in the treatment of acute
adrenal insufficiency. R. K. St. J. *Med J Australia* 1933 6.

Some results of deep X-ray therapy. R. Montagu. *Am
J Roent* 1933, 10 3, 43. (346)

Some results of deep X-ray therapy. R. Montagu. *Am
J Roent* 1933, 10 3, 43. (346)

Some results of deep X-ray therapy. R. Montagu. *Am
J Roent* 1933, 10 3, 43. (346)

Some results of deep X-ray therapy. R. Montagu. *Am
J Roent* 1933, 10 3, 43. (346)

Some results of deep X-ray therapy. R. Montagu. *Am
J Roent* 1933, 10 3, 43. (346)

Some results of deep X-ray therapy. R. Montagu. *Am
J Roent* 1933, 10 3, 43. (346)

Some results of deep X-ray therapy. R. Montagu. *Am
J Roent* 1933, 10 3, 43. (346)

Some results of deep X-ray therapy. R. Montagu. *Am
J Roent* 1933, 10 3, 43. (346)

Some results of deep X-ray therapy. R. Montagu. *Am
J Roent* 1933, 10 3, 43. (346)

Some results of deep X-ray therapy. R. Montagu. *Am
J Roent* 1933, 10 3, 43. (346)

Some results of deep X-ray therapy. R. Montagu. *Am
J Roent* 1933, 10 3, 43. (346)

Some results of deep X-ray therapy. R. Montagu. *Am
J Roent* 1933, 10 3, 43. (346)

Some results of deep X-ray therapy. R. Montagu. *Am
J Roent* 1933, 10 3, 43. (346)

Some results of deep X-ray therapy. R. Montagu. *Am
J Roent* 1933, 10 3, 43. (346)

Some results of deep X-ray therapy. R. Montagu. *Am
J Roent* 1933, 10 3, 43. (346)

Some results of deep X-ray therapy. R. Montagu. *Am
J Roent* 1933, 10 3, 43. (346)

Some results of deep X-ray therapy. R. Montagu. *Am
J Roent* 1933, 10 3, 43. (346)

Some results of deep X-ray therapy. R. Montagu. *Am
J Roent* 1933, 10 3, 43. (346)

Some results of deep X-ray therapy. R. Montagu. *Am
J Roent* 1933, 10 3, 43. (346)

Some results of deep X-ray therapy. R. Montagu. *Am
J Roent* 1933, 10 3, 43. (346)

Some results of deep X-ray therapy. R. Montagu. *Am
J Roent* 1933, 10 3, 43. (346)

The action of barium chloride of radium emanation on
copolymers in part. I. L. R. *Am J Cancer* 1933 19 3, 43. (346)

The response of various types of cancer to radium.
D. Quigley. *Canada Pract* 1933 11 14.

Hospital ; Medical Education and History

The operating room rules for new doctors, to
students regarding preparation for surgical operations and
the instrument. F. H. *Am J Surg* 1933 19.

Graduate training for the generalist. C. M. C. *Am
J Surg* 1933 19.

Postgraduate work in surgery. J. W. D. *Am J Surg* 1933 19.

The day of surgery. J. W. D. *Am J Surg* 1933 19.

The day of surgery. J. W. D. *Am J Surg* 1933 19.

The day of surgery. J. W. D. *Am J Surg* 1933 19.

The day of surgery. J. W. D. *Am J Surg* 1933 19.

The day of surgery. J. W. D. *Am J Surg* 1933 19.

The day of surgery. J. W. D. *Am J Surg* 1933 19.

The day of surgery. J. W. D. *Am J Surg* 1933 19.

The day of surgery. J. W. D. *Am J Surg* 1933 19.

The day of surgery. J. W. D. *Am J Surg* 1933 19.

The day of surgery. J. W. D. *Am J Surg* 1933 19.

The day of surgery. J. W. D. *Am J Surg* 1933 19.

The day of surgery. J. W. D. *Am J Surg* 1933 19.

The day of surgery. J. W. D. *Am J Surg* 1933 19.

The day of surgery. J. W. D. *Am J Surg* 1933 19.

The day of surgery. J. W. D. *Am J Surg* 1933 19.

The day of surgery. J. W. D. *Am J Surg* 1933 19.

The day of surgery. J. W. D. *Am J Surg* 1933 19.

The day of surgery. J. W. D. *Am J Surg* 1933 19.

The day of surgery. J. W. D. *Am J Surg* 1933 19.

The day of surgery. J. W. D. *Am J Surg* 1933 19.

The day of surgery. J. W. D. *Am J Surg* 1933 19.

The day of surgery. J. W. D. *Am J Surg* 1933 19.

The day of surgery. J. W. D. *Am J Surg* 1933 19.

The day of surgery. J. W. D. *Am J Surg* 1933 19.

The day of surgery. J. W. D. *Am J Surg* 1933 19.

The day of surgery. J. W. D. *Am J Surg* 1933 19.

CYNICOLOGY

Uterus

A new double tube method of intra-uterine
sterilization. H. J. *Am J Surg* 1933 19.

A new double tube method of intra-uterine
sterilization. H. J. *Am J Surg* 1933 19.

A new double tube method of intra-uterine
sterilization. H. J. *Am J Surg* 1933 19.

A new double tube method of intra-uterine
sterilization. H. J. *Am J Surg* 1933 19.

A new double tube method of intra-uterine
sterilization. H. J. *Am J Surg* 1933 19.

A new double tube method of intra-uterine
sterilization. H. J. *Am J Surg* 1933 19.

A new double tube method of intra-uterine
sterilization. H. J. *Am J Surg* 1933 19.

A new double tube method of intra-uterine
sterilization. H. J. *Am J Surg* 1933 19.

A new double tube method of intra-uterine
sterilization. H. J. *Am J Surg* 1933 19.

A new double tube method of intra-uterine
sterilization. H. J. *Am J Surg* 1933 19.

A new double tube method of intra-uterine
sterilization. H. J. *Am J Surg* 1933 19.

A new double tube method of intra-uterine
sterilization. H. J. *Am J Surg* 1933 19.

The action of barium chloride of radium emanation on
copolymers in part. I. L. R. *Am J Cancer* 1933 19 3, 43. (346)

The response of various types of cancer to radium.
D. Quigley. *Canada Pract* 1933 11 14.

The response of various types of cancer to radium.
D. Quigley. *Canada Pract* 1933 11 14.

The response of various types of cancer to radium.
D. Quigley. *Canada Pract* 1933 11 14.

The response of various types of cancer to radium.
D. Quigley. *Canada Pract* 1933 11 14.

The response of various types of cancer to radium.
D. Quigley. *Canada Pract* 1933 11 14.

The response of various types of cancer to radium.
D. Quigley. *Canada Pract* 1933 11 14.

The response of various types of cancer to radium.
D. Quigley. *Canada Pract* 1933 11 14.

The response of various types of cancer to radium.
D. Quigley. *Canada Pract* 1933 11 14.

The response of various types of cancer to radium.
D. Quigley. *Canada Pract* 1933 11 14.

The response of various types of cancer to radium.
D. Quigley. *Canada Pract* 1933 11 14.

The response of various types of cancer to radium.
D. Quigley. *Canada Pract* 1933 11 14.

The response of various types of cancer to radium.
D. Quigley. *Canada Pract* 1933 11 14.

Adrenal and Parathyroid Glands

The action of barium chloride of radium emanation on
copolymers in part. I. L. R. *Am J Cancer* 1933 19 3, 43. (346)

The response of various types of cancer to radium.
D. Quigley. *Canada Pract* 1933 11 14.

The response of various types of cancer to radium.
D. Quigley. *Canada Pract* 1933 11 14.

The response of various types of cancer to radium.
D. Quigley. *Canada Pract* 1933 11 14.

The response of various types of cancer to radium.
D. Quigley. *Canada Pract* 1933 11 14.

The response of various types of cancer to radium.
D. Quigley. *Canada Pract* 1933 11 14.

Intra-peritoneal (paravascular) cyst disappearing after drainage W G SPAVENS Brit J Surg 70 2, 2, 434

A case of malignant ovarian cyst with involvement of the appendix A L BAUTIN Med J Australia 923 1, 4
Irradiation of ovarian carcinoma incompletely removed E ZWISSEL Arch de med chirug y especial 9 2, 4, 490

External Genitalia

Chronic leukoplakia of the vulva followed by cancer F J T 400 Surg Clin N Am 9 350

Gonococcal vulvovaginitis in children as a hospital problem L J WYNKOP N York State J M 923 1004

Posterior vaginal drainage, its description of new technique used as special pelvic guide F R GORDON California Stat J M 923 10, 9 [364]

Vaginal cysts R HEN W. Zerkalib f Gynack 92 21, 216

Miscellaneous

Gynecology and obstetrics C BRADLEY Practitioner 923, 11, 73

Obstetrical gynecological free parietal, with special reference to treatment with ether W BENTON Mon abstract f Geburtsh Gynack 922, 11, 71

Peritoneal neuritis A L ELVERA Muenchen med Wochenschr 9 2, 107, 399

Peritoneal infections of the female pelvis B A BROS Nebraska State M J 9 2, 11, 25

The treatment of cystocele, rectocele, and uterine prolapse R T FEA Am J Obst & Gynec 9 2, 8 [364]

OBSTETRICS

Pregnancy and Its Complications

Weight as routine test in pregnancy preliminary report C H D VES J Am M Am 923, 1003, 249

Blood studies in normal pregnancy O S KREBS and A P BRINSON Am J Obst & Gynec 10 2, 67

The blood sugar during pregnancy and the puerperium W M ROWLEY Am J Obst & Gynec 9 2, 3 [364]

The sugar test in pregnancy W E WELLS and A E V. NORT Am J Obst & Gynec 9 2, 33 [364]

Hypertensive gravidarum report of cases T B SELL and A ORLANDO M & S J 923 107, 334

The treatment of hypertensive gravidarum W D FULTON Ohio Stat M J 923, 112

The Wassermann reaction in pregnancy W A HORTON Am J Syphilis 923, 10, 55 [364]

Tonics of the breast arising during pregnancy and lactation A R KILGORE California State J M 9 2, 100 5 [364]

Hemorrhagic lesions of the placenta and their relation to white infant formation F P McNAULTY and W J DELCORAY Am J Obst & Gynec 1023, 55 [364]

Ectopic pregnancy A HALL Illinois M J 9 2, 110, 21 [364]

Fatal pregnancy with rupture W P BRADSHAW Surg Clin N Am 9 2, 2, 38

The etiology and treatment of fetal pregnancy O COTTE Lyon chirurg 92 102, 665 [364]

A case of extra uterine pregnancy with living fetus at term operation in the course of false labor, with survival of the mother and child E ZARATE, A D ROJAS and V WIMAKOVICH Rev franc de gynac et d'obst 9 2, 102, 6 5

Abdominal pregnancy I ARNOLD Surg Clin N Am 9 2, 330

The bacteriology of fatal systemic infections following miscarriage or abortion W B MOODY Am J Obst & Gynec 923, 76 [364]

Labor and Its Complications

Anoxia and asphyxia in labor GROSS Am J Clin Med 923, 100, 30

Scapulothoracic emphysema seen during the second (normal) delivery in the Barnes Hospital O S KREBS and L R WILSON J Missouri State M Am 9 2, 11, 25

Local anesthesia in labor L H BAILEY Pacific Coast J Homoeop 1023, 1007 3

Pituitaria in the third stage of labor S SCHMIDT Surg Gynec & Obst 1023 1007, 68

Report of case of labor in an achondroplastic dwarf, with delivery by cesarean section, of an achondroplastic child E A D CLARKE and E C KORTOM Bull Buffalo Gen Hosp Buffalo, 9 2, 1, 2

An unusual case of obstructed labor R A WHITE J Roy Army Med Corps, Lond 923 11, 5

Perforation of the lower birth canal J R MANTLEY Minn State Med 9 2, 8

Complete laceration of the perineum, retroversion and malrotation of the uterus, transposition of the vagina I ARNOLD Surg Clin N Am 923 11, 333

Separation of the symphysis pubis during labor J H TELFAIR Am J Obst & Gynec 9 2, 9 [379]

The anaesthesia of patients for the chemical cesarean section H R BRADLEY Proc Roy Soc Med Lond 9 2, 101, Sec A 100

Cesarean section under local anesthesia L C ROOK Illinois M J 9 2, 110, 47

Double uterus cesarean section for the delivery of perineal right uterus at term J A SANDERSON J Am M Am 923 1003, 105 [379]

Cesarean section in presence of double pregnancies report of case W C SKELLS Boston M & S J 9 2, 110, 6

Double cesarean section, also 75 cesarean section, as a result J P GREENGILL Am J Obst & Gynec 9 2, 86 [371]

Puerperium and Its Complications

An analysis of cases of bacteremia occurring at the Lying In Hospital, 1920-1923 M ROSENBERG Bull Lying In Hosp City of New York, 923, 11, 4

The treatment of puerperal septicemia, its aetiology and nature E HERRERO Montschir f Geburtsh Gynack 922, 11, 347

Puerperal septicemia treated by blood transfusion H LEAVER Med J Australia, 923, 11, 675

Puerperal gas sepsis and uterine W SEARON Muenchen med Wochenschr 9 2, 102, 100

Newborn

Repeated dystocia from fetal anomaly in successive pregnancies A L M DONALD Am J Obst & Gynec 9 2, 8 [371]

- Cranial stress in the fetus during labor and the effects of excess stress on the intracranial content F HOLL
 AND J Obst & Gynec Brit Imp 9 2, 227, 55 [371]
- The diagnosis and treatment of cerebral injuries in the newborn F C GRA Y Therap Gaz 9 3 xl 4
- Laceration of the spinal cord in breech extraction as an important cause of fetal death and of paraplegia in childhood B CROOKES Am J M Sc 9 3 479 94 [372]
- Some obstetrical problems involved in stillbirths and deaths of newborn infants C S BACO J Low bet M Soc 9 3, 222 4 [373]
- Hemorrhage in the newly born W R (ROV) Med J Australia, 922 11, 76 [374]
- The treatment of haemorrhages of the newborn not including the brain and spinal cord J C HIRST Therap Gaz 9 3 xl 7
- Respiratory forms of tuberculosis in the infant M LARÉ Prog de la clin Madrid, 9 22 357

Miscellaneous

- How far should the teaching of obstetrics be carried in medical schools J L JAMES Hahnemann Month 9 3 1711, 50
- Review of the progress of obstetrics and gynecology for the year 9 H B M THIRDS Med Times 9 3 1
- Twentieth century obstetrics—a criticism A B SOW Nebraska Stat M J 9 3 viii 6
- Obstetrical experiences during fifteen years of general practice H GILBERT Med J Australia, 922 11, 65
- A report of 1000 obstetrical cases in private practice M T BIRSON J Med Am Georgia 9 3 222, 3
- Some practical difficulties in obstetrics and gynecology C BRIDGLEY Brit M J 9 3 1, 89
- How to meet obstetrical emergencies G GILLDOR Illinois M J 9 3 2102, 37

GENITO-URINARY SURGERY

Adrenal Kidney and Ureter

- Malignant tumors of the suprarenal gland W E STOVES J Am M Ass 9 3 1222 7 [374]
- Renal functional test and their value in urological medicine and surgery L BUYER Med Clin N Am 1922 4, 483
- Diastase in the blood and urine as a measure of renal efficiency G V HARRISON and R D LAWRENCE Lancet 924, 177 169 [374]
- The action of hexamethylenetetramine M G SUTTON Med J Australia, 9 3, 1, 3 [374]
- Unilateral diabetes A FULLERTON burg Gynec & Obst 1923 XXVII, 6 [374]
- Peritoneal insufflation of oxygen W C QUINN J Urol 9 3, 12, 3 [375]
- An experimental study of anoxic hemicals used in pyelography O S LA SLEY and H R M LEE J Urol 9 3 12, [375]
- The choice of pyelographic mediums R C GRAVES and L M D MOFF J Am M Ass 9 3 1222 68
- Renal torsion W I BRASCH J Urol 9 3 12 43 [376]
- An unusual kidney T K POTT Med J Australia, 922, 11, 670
- The diagnosis and surgical treatment of accessory kidney A MULLER Zisch f urol Chir 9 12 14 [376]
- Perforating wound of the kidney with secondary nephrectomy H A M & LARR Ann Surg 9 3 1771
- A case of symmetrical cortical necrosis of the kidney occurring in an adult male J BARTON J P th & Radiol, 9 3 221, 40
- Renal calc associated with urethral conditions in women E M STANTON Am J Obst & Gynec 9 3 7 [376]
- Renal calculi D N LEE DEATH Wisconsin M J 1923, 22 240 [376]
- Multiple renal calculi with infection case study with two-stage operation O J OBERKIRCHER Bull Buffalo Gen Hosp Buffalo, 9 3 35
- Complications of the surgical removal of stones from the kidney and ureter A C H J Lancet 9 3 2111 4
- Large hemorrhagic cyst of the right kidney BOTTURA Roussel Bull etudien Soc anat de Par 9 221, 37

- Congenital hydronephrosis and hydro ureters H MANTON and M S KELLY Arch Pediat 9 3, 21, 58
- Some cases of hydronephrosis R I O'NEIL J Urol 9 3 69
- The treatment of hydronephrosis caused by abnormal renal vessels G ELLISON Zisch f urol Chir 92 [378]
- Non tuberculous infections of the kidney F H COLE J Michigan Stat M Ass 9 3 222 3
- The clinical picture of chronic inflammatory diseases of the renal coverings F NEUMANN Zisch f urol Chir, 922, 12 400 [378]
- Tuberculosis of the kidney M WELSH J South Carolina M Ass 9 3 222 160
- Renal tuberculosis W C QUINN burg Clin N Am 9 3 12, 3
- Syphilis of the kidney T G SCHWABEL Med Clin N Am 9 3 12, 3
- Spontaneous healing in destructive pyelonephrosis (report of two cases) E M WELSH Bull Buffalo Gen Hosp Buffalo, 9 3 3
- Pyelocystitis W C STURLING J Urol 9 3 12, 3
- Pylitis from the standpoint of the internist NAST J Am Inst Homoeop 9 3 222 63
- Tumors of the kidney H A B OCH Canadian M Ass J 9 3 222 3 [378]
- Adenocarcinoma of the kidney J S HODGLEY burg Clin N Am 9 3 12, 3
- Endothelioma of the left kidney extending down the ureter and projecting into the bladder removal death four months later W G SWENNER Brit J Surg 9 3 2, 43
- Types of kidney positions and the corresponding operations V A JAMOUSKO Indag Med, Petrograd 9
- The cause and prevention of secondary hemorrhages after nephrectomy E REISS and P ROETTER Zisch f urol Chir 9 3, 390 [379]
- The anterior incision in secondary nephrectomy H A ROYSTER Surg Clin N Am 9 3 12, 3 [379]
- The immediate results of nephrectomy LAROUX Med Press, 9 3 222 3
- A case of reduplication of the left ureter and left renal pelvis R F O'NEIL J Urol 9 3, 12, 63
- Ureteral dilatation in lower urinary tract obstruction F J PARKINER Bull Buffalo Gen Hosp Buffalo 9 3, 3

The value of uroteropyelography in disease of the ureter and kidney pelvis. J. M. M. WYNN and A. L. SMITH. *Med Herald*, 1923, xia, 9.

Bladder, Urethra, and Penis

Diverticula of the bladder in children. A. HYMAN. *Surg. Gynec. & Obst.* 1923, xxxvii, 7.

A case of mixed tumor, epitheliocarcinoma, of the bladder of probably allantoic origin. C. LIDONMANT. *J. Urol.* 1923, xlviii, 373. [309]

Bladder neck obstructions, their surgical relief in older cases to the Young pouch. W. B. PARKER. *Surg. Gynec. & Obst.* 1923, xxxvii, 36. [320]

Associated closed traumatic ruptures of the posterior urethra and bladder. L. PINSKY. *Lyon chir.* 1923, xix, 535. [320]

Infection of the bladder and the kidneys associated with congenital deformity of the lumbosacral spine. W. P. BRADSHAW. *Surg. Clin. N. Am.* 1923, vii, 387.

The formation of kistofore from the mucosa of the bladder from potassium permanganate. K. PIERCE. *Glasgow Med.* 1923, 9, 666.

T. cases of chronic simple cystitis of unusual etiology. M. LA. VIGNA. *J. Am. M. Ass.* 1923, 3, 1123, 3.

Cystitis gangrenosa. M. J. KARLIN. *J. Akad. Zhenak Bol.* Petrograd, 1923, xxxiii, 85.

The regeneration of resected urinary bladders in rabbits. H. SCHILLER. *Surg. Gynec. & Obst.* 1923, xxxvii, 24. [321]

Operations for urinary fistula. E. SCHROEDER. *Monatsschr. f. Geburtsh. Gynaec.* 1923, li, 24.

Serological examination of 100 strains of the gonococcus isolated from cases of acute and subacute urethritis in the male from the Medical Research Council. W. J. TITLTON. *J. Roy Army Med Corps*, Lond. 1923, 21.

Syphilitic genital chancre. M. B. PARONAGIAN and H. GOODMAN. *Am. J. Syphilis*, 1923, vii, 43.

Gonorrhea and its complications in the male: affection of the four naviculars. N. E. APOSTOL. *Internat. J. Surg.* 1923, xxxvii, 24, 69.

A case of epithelioma (?) of the penis. A. E. M. WOOLY. *Proc. Roy. Soc. Med. Lond.* 1923, xvi, Clin. Sect.

Genital Organs

Genital malformations and their treatment. G. GAZDAR. *Chir. med.* 1923, ix, 52.

An unusual complicated malformation of the male sexual organs and its development: hypoplastic renal root with abnormally opening double ureters and abnormal position of one ejaculatory duct. W. RICH. *Zschr. f. Chir.* 1923, li, 6.

A third testicle as an interstitial appendage. A. J. F. O'CONNOR. *Arch. f. path. Anat.* 1923, cxxxviii, 8.

The absorbing power of the tunica vaginalis in hydrocele. L. TORRACA. *Arch. ital. chir.* 1923, vi, 404.

The present position of testicle transplantation in surgical practice: preliminary report of new method. M. THORIC. *Endocrinology* 1923, vi, 77.

The Stenack operation. P. SCHROEDER. *Wien. Rikolz.* 1923.

The Stenack operation: report of twenty six cases with endocrine interpretation. H. BENJAMIN. *Endocrinology* 1923, vi, 776.

Ligation of the vessels (epididymectomy) by Stenack's method as means of rejuvenation in old age and in other conditions such as impotence and depression. K. SAJO. *Ugsk. f. Læger* 1923, xlviii, 597-650. [321]

A case of tuberculous epididymitis terminating in tuberculous meningitis producing sarkothrombosis of the spinal fluid. B. L. CHAWWON. *Med. Clin. N. Am.* 1923, vi, 1073.

An analysis of 1,000 testicular substance implantations. L. L. STANLEY. *Endocrinology* 1923, vi, 787. [322]

Intracanal injections of salt solution in gonorrheal epididymitis. W. RUCKERT. *Deutsche med. Wchnschr.* 1923, xlviii, 313.

Elongation of the spermatic cord by division of the internal spermatic artery. W. RUCKERT. *Deutsche med. Wchnschr.* 1923, xlviii, 313.

Torsion of the spermatic cord. H. HILAND. *Klin. Wchnschr.* 1923, xlviii, 313.

A rare anomaly found in: congenital right inguinal hernia, tubular diverticulum or prolongation of the right seminal vesicle extending into the scrotum as: remnant of the spermatic cord. R. V. TAY. *Surg. Clin. N. Am.* 1923, vii, 55.

The frequent association of varicocele on the right side with bladder disturbances of nervous origin. A. AMER. *Deutsche med. Wchnschr.* 1923, xlviii, 6.

The prostatic problem. D. W. MACKENNIE and M. J. SWEET. *Surg. Gynec. & Obst.* 1923, xxxvii, 1923.

The use of radium in the treatment of benign hyper trophy of the prostate. W. A. DAVIS. *Minnesota Med.* 1923, 2, 49.

A study of anastomosis in prostatectomy. J. D. BARNY and W. M. SERNOWY. *Surg. Clin. N. Am.* 1923, vii, 303. [323]

Suprapubic and perineal prostatectomy: the advantages of each. E. D. VAN. *Nebraska Star* M. J. 1923, vii, 9.

A simple method of draining the bladder after suprapubic prostatectomy. E. D. MARTIN. *Surg. Clin. N. Am.* 1923, vii, 477.

Recurrence of the benign prostate. W. A. BEY. *Surg. Gynec. & Obst.* 1923, xxxvii, 39. [323]

A unique case of carcinoma (tuberculo-sarcoma) and syphilis in the genital tract. D. M. P. MACK. *J. Am. M. Ass.* 1923, lxxx, 79.

The chemical aspects and treatment of urogenital tuberculosis. F. VERHAARD. *d. Kong. Res. Chr. Petrograd*, 1923.

The treatment of genital tuberculosis with iodine. MACHESLAV. *Verhandl. d. Kong. Res. Chr. Petrograd*, 1923.

The iodine treatment of genital tuberculosis. L. VERHAARD. *d. Kong. Res. Chr. Petrograd*, 1923.

Castration of the male by the X-ray. H. R. SCHWARTZ. *Schwarz med. Wchnschr.* 1923, liii, 586. [324]

Miscellaneous

A genito-urinary routine suggested as practical for the general practitioner. M. H. WYMAN. *J. South Carolina M. Ass.* 1923, xii, 172.

Important points in the technique of roentgenological examinations of the urinary tract. B. H. NICHOLS. *Am. J. Roentgenol.* 1923, x, 9. [325]

The quantitative estimation of iodine in urine. H. L. MANN. *J. Lab. & Clin. Med.* 1923, vii, 371.

The causative factor of renal compression in upper urinary obstruction. G. C. BURR. *J. Michigan State M. Soc.* 1923, 1, 123.

A simple method of introducing smoketube catheter. N. F. O'CONNOR. *J. Am. M. Ass.* 1923, lxxx, 30.

Newer aspects of urinary surgery. D. N. LORING. *Br. J. Urol.* 1923, 1, 30. [326]

Genito-urinary operations. F. S. EDWARDS. *Pediatrics* 1923, xi, 6.

SURGERY OF THE EYE AND EAR

Eye

- Standards of vision for scholars and teachers in council schools N B HARRA Brit M J 923 58
- Retinopur contraction of the visual fields in pregnancy C F FINE Arch Ophth 93 ln, 50
- Blepharitis of palpebral margin and organotherapy M KERN Am J Clin Med 93 xxx, 8
- Paralysis of divergence, with report of three cases due to epidemic encephalitis J H DUNNIVANT Arch Ophth 923 ln, 30
- Certain anatomical and physiological considerations bearing on heterophoria W B LANCASTER South M J 923, xvi, 35
- Isolated paralysis of the inferior oblique S B MARLOW Arch Ophth 923 ln, 56
- Abiotrophy ophtalmoplegia externa A W STELLINO Arch Ophth 93 ln, 56
- Pemphigus of the conjunctiva G H HOOD Med J Australia, 923 n, 350 [285]
- Dermoid of the conjunctiva report of case C M MILLER South M J 93, xvi, 4
- Anophthalmic keratitis report of case S WALKER, J J Am M Ass 93 lxxx, 60
- The etiology of sympathetic ophthalmitis H H STARK Am J Ophth 923 vi, 89 [285]
- Metastatic thyroid tumor in the orbit A KRAVE Arch Ophth 923 ln, 68 [285]
- The use of the pupilloscope in neurology H O MINKINS and O BARREY California Stat J M 93 xxi, 1
- The action of miotic drugs on diseased intra-ocular structures R J CUNY Am J Ophth 923 vi, 90
- Some aspects of ocular tuberculosis A L WEITZMAN Proc Roy Soc Med Lond 93 xvi, Sect Ophth
- Ocular syphilis J C DOUGLAS Med J Australia 923, 19
- Calcareous degeneration of the eye, with deposits on the iris R BATTEN Proc Roy Soc Med Lond 923 xvi, Sect Ophth
- Notes on case of cataract in child following lightning stroke W V COVERMAN Med Press, 93 cxv, 5
- Factors influencing the choice of method for cataract extraction D SCOTT Arch Ophth 93 ln, 5 [284]
- The etiology of optic atrophy W L TEMPLETON Brit M J 923, 1, 6
- The masts and halos of glaucoma R H ELLIOT Am J Ophth 1923, vi, [284]
- Should we still consider the ocular tension as being due to the aqueous humor? The ocular tension after puncture of the anterior chamber or pressure on the eyeball A P MASTON Arch Ophth 923 ln, 5
- A pleuroplethretoscope F A WILLIAMSON NORTON Proc Roy Soc Med Lond 93 xvi, Sect Ophth
- Ophthalmic operations A CHITTENDEN Practitioner 923, xi, 5

- The open treatment in eye operations W B I POLLOCK Brit M J 923 5
- Freshened cartilage implants following enucleation W B DORRITY Am J Ophth 923 vi, 9
- The nursing of eye cases L KINGHAM Trained Nurse & Hosp Rev 923 lvi, 39

Ear

- Progress otology, rhinology and laryngology during 9 D AUSTIN A PALMER, and H HAYS Med Times, 93 li, 8
- A case of absolute bilateral deafness with almost complete loss of vestibular activity A RYLAND Proc Roy Soc Med Lond 93 xvi, Sect Otol 7
- Complete traumatic destruction of vestibular function with unusually slight concomitant cochlear involvement S O FIELDS Laryngoscope 93 xxxii, 6
- A case of tuberculosis of the right ear impaired hearing of the left ear and polyarthritis due to purulent arthritis G WOLF Laryngoscope, 923, xxxii
- Tinnitus associated with facial spasm G T JENKINS Proc Roy Soc Med, Lond 923, xvi, Sect Otol 8
- An attempt at standard tests for hearing S HARRISON and W S TUCKER Proc Roy Soc Med Lond 923, xvi, Sect Otol
- The improved artificial drum as an aid to hearing study of certain principles involved P D KERNANOV Laryngoscope, 923 xxxii, [284]
- Chronic suppurative otitis H M J Med J Australia, 923 li, 704
- Case of acute suppuration in one ear subjected to early operation on account of complete deafness of the opposite ear J DUNNAN GRANT Proc Roy Soc Med Lond 93, xvi, Sect Otol 6
- Otitis media complicating operations on the glosso-pharyngeal H R LYONS J Am M Ass 923, lxxx, 76
- A septic type of temperature not referable to the ear in cases of acute suppurative otitis media H I LILLIE Ann Otol Rhinol & Laryngol 923, xxxi, 990 [287]
- Report of second case of plastic labyrinthitis with interesting findings W G SHERIDAN J Am Inst Homoeop 923 xv, 603
- A temporal bone from case of tuberculous lateral sinus thrombosis and extracerebral abscess E D D VIV Proc Roy Soc Med Lond 93, xvi, Sect Otol 5
- A method of demonstrating the surgical anatomy of the mastoid by models J W DOWNARD J Am Otol Rhinol & Laryngol 93, xxxi, 909
- Acute mastoiditis associated with acute nephritis C M SAUTTER Med Press, 923, cxv, 94
- The radical mastoid operations E B BROOKS N brislat Stat M J 93 vii, 415
- Aseptic meningitis following operation for acute mastoiditis secondary operation, 11th recovery C C COIT Bull Buffalo Gen Hosp Buffalo, 923 4, 33

SURGERY OF THE NOSE, THROAT AND MOUTH

Nose

- Depressed fracture of nasal and associated bones H D COLLINS Proc Roy Soc Med Lond 93, xvi, Sect Laryngol 4

- A case of depressed bony bridge of nose H D COLLINS Proc Roy Soc Med Lond 923, xvi, Sect Laryngol 4
- A case of depressed fracture of the nasal arch H D COLLINS Proc Roy Soc Med Lond 923 xvi, Sect Laryngol 6

The Tumor treatment of the broken nose. D. McKENZIE. *Proc Roy Soc Med Lond* 93, xvi, Sect Laryngol 3.

Injury to the nose from left accident. W. M. COLLIER. *Proc Roy Soc Med Lond* 93, xvi, Sect Laryngol 4.

Complete rhinoplasty by cartilage transplant and pedicled temporal forehead flap. C. A. M. WILLIAMS. *Ann Surg* 93, lxxxv, 6.

Some clinical observations on the correction of external deformities of the nose by the intranasal route. H. B. BLACKWELL. *Laryngoscope*, 93, xxxiii, [1933].

Nasal prostheses. VOLLMER. *Deutsche Wochenschr f Zahnchir* 93, 2.

The management of certain nose and throat disorders in singers and speakers. J. W. VOORHEES. *Laryngoscope*, 93, xxxiii, 43.

The intranasal injection of alcohol in the treatment of hypertrophic rhinitis and some of the nasal diseases. O. J. STREY. *Ann Otol Rhinol & Laryngol* 93, xxxi, [1933].

Papilloma of the septum nasi. H. L. W. HALE. *Proc Roy Soc Med, Lond* 1933, xvi, Sect Laryngol.

The indications and contraindications for the submucous resection of the nasal septum. J. N. HOFFMANN. *Laryngoscope*, 93, xxxiii, 3.

Some points in the comparative anatomy of the nose and the accessory sinuses which account for the variations in these structures in man. J. M. INGRAM. *Ann Otol Rhinol & Laryngol* 93, xxxi, 3.

Paranasal sinuses of children, with special references to ocular symptoms. E. W. CARPENTER. *J South Carolina M Ass* 1933 xii, 38.

Observations upon the formation and function of the accessory nasal sinuses and the mastoid cells. A. W. PROCTOR. *Ann Otol Rhinol & Laryngol* 1932, xxxi, 1083.

The chronic antrum. T. B. JOSEPH. *Lancet*, 93, civ 78.

Hyperplasia and infection in post-ethmoid sphenoidal ocular complications. G. F. HARRISON. *Ann Otol Rhinol & Laryngol* 93, xxxi, 964.

Surgery of the ethmoid labyrinth. A. H. AVONIA. *Ann Otol Rhinol & Laryngol* 10, xxxi, 947.

The nature and extent of surgical interference in acute nasal accessory cavity suppuration. J. E. BROWN. *Ohio Stat M J*, 93 xix, 6.

The pathological-anatomical difference between the fetal and the non fetal sinus. A. ROSENTHAL. *Ann Otol Rhinol & Laryngol* 93, xxxi, 950.

Some further observations on the etiology and treatment of maxillary sinusitis. H. V. DUTTON. *Ohio Stat M J* 93 xix 3.

Masses in the parietal and irrigation of the maxillary sinus. W. E. GROVE. *Ann Otol Rhinol & Laryngol*, [1933] 1933, xxxi, 933.

Carcinoma of the antrum of Highmore. K. S. BLACK. *Wisc. Surg Clin N Am* 93, 11445.

Abscess of the lung and the method of prevention in nasopharyngeal surgery. C. W. RICHARDSON. *Ann Otol Rhinol & Laryngol* 1931, xxxi, 960.

Throat

Throat, nose, and ear. J. DUNCAN GRANT. *Practitioner* 1933, cx.

The message of the diagnostic throat culture in diphtheria. J. G. M. BULLOWA, R. C. HARRIS, and H. M. LITCH. *J Am M Ass* 93 lxxx, 340.

A fatal case of Vincent's angina. D. N. HECK. *Ann Otol Rhinol & Laryngol* 93, xxxi 30.

The tonsils considered by general practitioner. G. P. O'DA. *Med J Australia*, 93 4, 3.

The tonsils as focus of systemic infection. K. S. BLACKWELL. *Surg Clin N Am* 93 4, 1453.

Electrical methods in the treatment of the tonsils. W. D. McFEE. *Med Herald*, 93, xlii, 38.

The present status of radiation treatment of the tonsils. C. F. ROBERTSON. *N York M J & Med Rec* 93 cxvii, 30.

X-ray treatment of tonsillar and lymphoid tissue. J. H. THORNDYKE. *Ann Otol Rhinol & Laryngol* 93, xxxi, 1044.

Tonsillectomy in infancy and childhood. E. M. TAYLOR. *Arch Pediatr* 93, xl 30.

A self retaining palate retractor. G. D. WOLF. *J Am M Ass* 93, lxxx, 04.

Subcutaneous emphysema of the neck and chest following tonsillectomy in an epileptic, recovery. S. ROBERTSON. *Ann Otol Rhinol & Laryngol* 10, xxxi, 1037.

Long abscess following tonsillectomy. F. N. BROWNE. *Rhode Island M J*, 93 vi.

Fatal infections following tonsillectomy. I. H. TURNER and A. LEVITZKY. *J Am M Ass* 93 lxxx, 30.

Cysts of the bursa pharyngea. F. A. FINE. *Laryngoscope*, 93, xxxiii, 37.

M th

The progress of the month hygienic movement. W. R. WOODWARD. *Boston M & S J* 93 cxxxviii.

Erysipelas of the mouth. E. TROSK. *Brit M J* 1933, 93.

The technique of oral radiography. C. O. SARGENT. *Internat J Orthodont Oral Surg & Radiography* 93 ix 36.

Dental responsibility of correct oral diagnosis. B. L. BARN. *Dental Cosmos*, 103, lxxv 3.

Some physiological principles in orthodontia. M. H. FISCHER. *Internat J Orthodont Oral Surg & Radiography*, 93 ix, 16. [1990]

The chemical, pathological and radiological aspects of infection of the teeth and gums. W. WILCOX. *Brit M J* 933 4, 53.

A contribution to our knowledge of pyorrhea from the standpoint of histopathology. W. H. HAYWOOD, C. O. PETER, C. WESTRA and F. V. SOROVTON. *Dental Cosmos*, 93 lxxv.

Multiple calculi in Stenson duct report of an unusual case. A. H. NORMAN. *J Am M Ass* 93 lxxx, 3.

A submandibular gland containing large salivary calculi. D. McKENZIE. *Proc Roy Soc Med Lond* 93 xvi, Sect Laryngol 7.

A case of Ludwig's angina. D. H. LEVY. *N York M J & Med Rec* 93, cxvii 40.

A case of erysipelas of the right half of the face treated by dithery. J. DUNCAN GRANT. *Proc Roy Soc Med Lond*, 93 xvi, Sect Laryngol 8.

Tuberculous abscesses of the tongue. R. M. HARRINGTON-JONES. *Lancet*, 93 cxv 8.

A case of ulceration of the palate and fauces. W. H. KIRBY and W. H. THORNDYKE. *Proc Roy Soc Med Lond*, 93, xvi, Sect Laryngol 3.

Orthodontic treatment of cleft palate. H. E. KELLEY. *Dental Cosmos* 93, lxxv.

Submucous lipoma in the glosso-epiglottic furrow. T. B. LAYTON. *Proc Roy Soc Med Lond* 93 xvi, Sect Laryngol.

JUNE, 1923

International Abstract of Surgery

Supplementary to
Surgery, Gynecology and Obstetrics

EDITORS

FRANKLIN H. MARTIN Chicago
SIR BERKELEY MOYNIHAN K.C.M.G. C.B. Leeds
PAUL LECENE Paris

SUMNER L. KOCH, Abstract Editor

DEPARTMENT EDITORS

DEAN D. LEWIS, General Surgery	ADOLPH HARTUNG Roentgenology
CHARLES B. REED Gynecology and Obstetrics	JAMES P. FITZGERALD Surgery of the Eye
LOUIS E. SCHMIDT Genito-Urinary Surgery	FRANK J. NOVAK, J. Surgery of the Ear
PHILIP LEWIN Orthopedic Surgery	Nose and Throat

CONTENTS

I Authors	ii
II Index of Abstracts of Current Literature	iii
III. Editor's Comment	ix
IV Abstracts of Current Literature	407-494
V Bibliography of Current Literature	495-515
VI. Volume Index	i-xxiv

Editorial communications should be sent to Franklin H. Martin, Editor 30 N. Michigan Ave. Chicago
Editorial and Business Offices 30 N. Michigan Ave. Chicago, Illinois, U. S. A.
Publishers for Great Britain: Belliere, Tindall & Cox, 8 Henrietta St. Covent Garden, London, W. C.

AUTHORS

OF THE ORIGINAL CONTRIBUTIONS WHICH ARE ABSTRACTED IN THIS NUMBER

- Abel, I 43
 Abspert, F 457
 Aury, L B 47
 Ashley, A D 443
 Ascholt, G, 433
 Atkinson, G, 44
 Babcock, J W 40
 Bacon, D K, 4
 Bakker, C 450
 Bakken, F C 43
 Ball, W G, 475
 Barcey, J D 475 476 483
 Benedict, F G 4 4
 Berry, G 49
 Bernch, R 45
 Burcher, E, 44
 Blah, M E, 409
 Bloodgood, J C 430
 Bolls, H 43
 Bonney, V 453
 Boyd, E 49
 Boyd, G L, 425
 Brewer, G F 4
 Burnham, M F 43
 Burns, J W 405
 Callender, C L 440
 Calvaria, D 434
 Canessa, U 480
 Camerain, M 430, 44
 Canetti, A 435
 Chamberlain, W B 456
 Chetwood, C H 470
 Christopher, F 448
 Cicera, S, 430
 Clark, A J 455
 Collins, A W 435
 Colston, J A C 453
 Crawford, R H 477
 Crenshaw, J L, 48
 Crile, G W, 414
 Cumming, R L 477
 Curtis, A H, 467
 Carter, L, 4 8
 Dalmon, H 4 5, 490
 Darling, S C, 493
 Da Silva, H J 470
 Da Silva, L E 4
 Deutchbender, C 443
 Duhamel, K 450
 Eggers, C 4 6
 Emborn, M 430
 Epstein, G 446
 Faer, J F S 4 488
 Fay, F A, 40
 Fawcett, H 437
 Floerchen, H 4 5
 Foet, V C, 433
 Francis, M 433
 Falcione, A 474
 Gerlach, W 438
 Giles, A E, 403
 Goldstone, G R 443
 Glass, E, 430
 Gostar, O 4 9
 Goldschmidt, W 436
 Good, F L 473
 Gordon, O A 404
 Grant, F C 43
 Graves, S 4
 Greenhill, J P 473
 Griffith, H F 43
 Guthrie, C G 453
 Guy, E F 435
 Haas, 430
 Haas, W 430
 Hackelbrock, M 445
 Hauges, E F 483
 Halberstadt, L, 450
 Hall, O D 400
 Halstead, A Y, 448
 Hammer, H 474
 Hardt, L L, 424
 Harvey, S C 4
 Hauser, G 419
 Hawks, E M 47
 Hawthorne, C O 4
 Haynes, L W 477
 Hallstrom, J 440
 Herbst, R H 480
 Hermann, L 478
 Harnett, F 475
 Hinton, A 418
 Hoffmann, V 417
 Holman, E F 414
 Hoess, M R 487
 Hook, J G 453
 Horbach, F, 478
 Hunsen, G L 470
 Icke, G 444
 Jackson, C 419
 Jones, J H 43
 Judd, E S, 4 3
 Jungblut, C W 43
 Jones, A 403
 Kumpner, O I 477
 Kappes, M 438
 Karmann, C 436
 Keyser, L D 454
 Kidd, F 48
 Kandelwagh, J B 430
 Klempner, P 45
 Kraus, W 45
 Kretschmer, H L 477
 Kraus, I 40
 Kuba, C F 49
 Laeven, A 435
 Landolt, E 457
 Lasse, F J 45
 Lehman, E P 448
 Lehnbecker, A 451
 Lemperg, F 445
 Lén, A 447
 Lipan, S, 4 6
 Lukanoff, I B 480
 Lorenz, A 443
 Lowenberg, S 4
 Uxor, R H, 476
 Marked, N W 407
 Marxovitch, B 4 4
 McDonnell, G 45
 Meckner, L, 407
 Melem, O C, 406
 Meyer, M, 430
 Miller, R H 455
 Mills, R W, 430
 Mirer, W J, 415
 Moginiski, A 4
 Morton, C A 4 7
 Morton, R, 457
 Moyzhas, B 423
 Mueller, W 455
 Munger, A D 45
 Munsey, R D 430
 Natanson, L N 480
 New, G B 4
 Nicolaysen, N, 454
 Osborne, E D 444
 Ostermeyer, C 410
 Oordendal, A J F 450
 Palagay, J 430
 Park, E A 436
 Paul, N 45
 Pfeiffer, D B, 43
 Pichard, R 457
 Ponsopp, L 418
 Quinn, L P 438
 Rabin, H 440
 Ranshoff, J L 434
 Reuter, J J 440
 Richman, M L 430
 Richards, T K 47
 Rivers, A B 434
 Rowell, H G, 407
 Rowntree, L G 434
 Rudolf, A, 423
 Sadler, J E 4 7
 Samaby, J M 454
 Sante, L R 435
 Satta, F 438
 Sayad, W, 4
 Schlutter, E 400
 Scholl, A J 454
 Schulz, O E, 445, 430
 Schwarz, E 444
 Sears, N P 474
 Selbhan, H 468
 Sheddles, W M 453
 Selck, W M, 433
 Speranza, D M 454
 Slavens, J H 450
 Sussner, R 430
 Small, W B 436
 Smith, S M, 455
 Stevens, W E 478
 Sutherland, C G 414
 T. lox, W J 450
 Tenckhoff, B, 407, 46
 Tenen, C E, 48
 Thompson, A 430
 Tuck, H 455
 Trander, J H 40
 Turner, H 417
 Tyler, M 453
 Underhill, F P 453
 Volkmann, J 438
 Von Albertus, A 408
 Von Balogh, E 450
 Von Stabenoch, 433
 Waldman, E 473
 Watson, E M 477
 Webster, J H D 430
 Weil, S 44
 Weiss, E A 403
 Weiss, W E 469
 Weyers, 473
 Wether, L B 436
 Wiemann, O 408
 Wilegans, 456
 Wills, H 458
 Wulber, O O 430
 Wolf, G 43
 Wroden, R 44

CONTENTS—JUNE, 1923

ABSTRACTS OF CURRENT LITERATURE

GENERAL SURGERY

SURGICAL TECHNIQUE

Operative Surgery and Technique

- TRACY, B. Hypertonic Glucose Solutions as Prophylactic Against Injurious Effects of Operation and Anesthesia 407
- MILNER, E. The Physiology of Wounds 407
- TRACY, B. Ventrofixation of the Uterus and Its Complications 46
- BOYCE, V. The Modern Scope and Technique of Mysectomy 463
- HUNTER, F. The Operative Treatment of Cystic Dilatation of the Vesical End of the Ureter 478
- CAMERO, U. The Treatment of Entrophy of the Bladder 480
- KURT, C. F. Torsionectomy and Its Complications 49

Aseptic and Antiseptic Surgery

- KOWELL, H. G. The Surgical Importance of Iodine Idiosyncrasy and Poisoning 407

Anesthesia

- WOMER, V. O. Clinical Investigations on the Behavior of the Blood Pressure and the Pulse During and After Novocaine Adrenalin Anesthesia 408

Surgical Instruments and Apparatus

- RICHIE, A. J. A Thoracic Abdominal Gate 409

SURGERY OF THE HEAD AND NECK

Head

- BLANK, M. E. Fracture of the Skull and Its Complications 409
- GEYER, S. Fracture of the Skull Base with Supratentorial Hemorrhage on the Opposite Side: Report of an Interesting Case 4
- ALAN, W. Y. and HARVEY, S. C. The Regeneration of the Meninges 4
- HAWTHORNE, C. O. Cerebral and Cerebellar Hemorrhages in Apparently Healthy Adolescents and Children 4
- MOOREHEAD, W. The Parasitology and Pathological Anatomy of Brain Cysticercosis 4
- LEVINSKY, S. Increased Cerebral Pressure with Fat Embolism 4
- FELT, T. and GRAVER, F. C. Ventriculography and Intraventricular Photography in Internal Hydrocephalus 4
- DAYNE, L. E. Lesions of the Paraventricular Area 4

- BREWER, G. E. Carcinoma of the Cheek and Lip: General Principles Involved in Operations and Summary of the Results Obtained at the Presbyterian, Memorial, and Roosevelt Hospitals, New York 4
- EMER, J. F. S. Rotation of the Cheek 4
- JORD, E. S. and NEW, G. B. Carcinoma of the Tongue: General Principles Involved in Operations and Summary of the Results Obtained at the Mayo Clinic 4 3
- CRILE, G. W. Carcinoma of the Jaws, Tongue, Cheek, and Lip: General Principles Involved in Operations and Summary of the Results Obtained at the Cleveland Clinic 4 4
- EMER, J. F. S. and ACHESON, G. The Operative Correction of Ear Defects by Fritheal Inlays 489

Neck

- MAXIMO, ITCH, B. Tumors of the Parathyroid Gland 4 4
- BARNETT, F. G. The Basal Metabolism of Young Girls 4 4
- HOLM, E. F. Hypoglycemia in Esophageal Cancer: A Preliminary Report 4 4
- FUTCHER, H. The Method and Technique of Operation for Goiter 4 5
- DARMANN, H. An Unusual Case of Carcinoma of the Larynx: Predicted Carcinoma of the Larynx 4

SURGERY OF THE CHEST

Chest Wall and Breast

- LEVIN, S. Post Typhus Fistula of the Ribs 416
- EGGERS, C. Chronic Empyema 4 6
- SADLER, J. E. A Study of the Cases of Carcinoma of the Breast Operated upon by Myself and the End Results Obtained in Them 4 7
- MOYER, C. A. Malignant Diseases of the Breast With Special Reference to the Supraclavicular Extension of the Operation 4 7
- CARROLL, L. Local Recurrence Following Extirpation of Carcinoma of the Breast 4 8
- HINCH, A. Recurrences of Carcinoma of the Breast Which Developed After Clinical Cure Lasting Five Years or Longer Following Treatment with the Roentgen Ray 4 8
- Trachea and Lungs
- JACKSON, C. Bronchoscopic Clasp Lung Supportation Caused by the Prolonged Sojourn of Foreign Body 419

- HADLER, C. Pyopneumothorax
 GORTER, O. The Radical Phrenocotomy as an Independent Therapeutic Measure in Unilateral Pulmonary Phthisis
 OSTERMEYER, K. The Mobilization of the Entire Shoulder Girdle as an Aid in Thoracoplasty for Pulmonary Tuberculosis
 DUGLASS, K. and SEATLECK, J. H. Sinus Diseases and Lung Infections

Pharynx and Esophagus

- MILLS, R. W. and KIRKENDALL, J. B. Further Observations on the Radical Treatment of Cancer of the Esophagus, with Review of Forty-Four Cases So Treated

Miscellaneous

- BALDREY, F. C. An Experimental Study of the Cause and Effects of Immobility of the Diaphragm

SURGERY OF THE ABDOMEN

Abdominal Wall and Peritoneum

- WOLFE, G. The Pathogenesis of Tumor of the Omentum
 BACOF, D. K. Levatoris in the Treatment of Peritonitis
 JUNGHELL, C. W. The Bactericidal and the Inhibitory Power of Ether. A Contribution to the Study of the Ether Treatment of Peritonitis
 JOHNS, J. H. and PIERCE, D. B. Occlusive Treatment in Peritonitis

Gastro-Intestinal Tract

- RUDOLF, A. Experiences in the Surgical Treatment of Gastroptosis
 MORTON, B. Some Problems of Gastric and Duodenal Ulcer
 HART, L. L. and RYAN, A. B. Toxic Manifestations Following the Alkaline Treatment of Peptic Ulcer
 GUY, E. F. The Effect of Gastro-Enterostomy on Gastric Function as Interpreted by the Fractional Test Meal
 COLLENDER, W. So-Called Laminoplastics
 PALCZYK, J. Roentgenological Investigations on the Functional Behavior of the Stomach in the Various Types of Posterior Retrocolic Gastro-Enterostomy and Comparison of Its Value in Ulcer of the Stomach and Duodenum
 FRUTKIN, H. Operations on the Stomach (Recesses) in Advanced Age
 BOTE, G. L. The Etiology of Acute Ischemic Intestine in Infants
 GERLACH, W. Mechanical Injuries to the Mesos caused by Ascendens in Intestinal Obstruction Due to Ascendens
 QUAY, E. P. Pathogenic Prolapse of the Right Colon
 WITTEMBERG, O. O. The Indications For, and the Results of, Anchoring the Head of the Cecum

- 49 LINTON, M. Chronic Ulcerative Cecitis and Its Treatment 490
 49 Liver, Gall-Bladder, Pancreas, and Spleen
 HAAS, W. The Bacterial Content of the Blood of the Portal Vein and the Origin of Liver Abscesses 490
 49 REYNOLDS, M. E. Gall Bladder Disease 490
 439 GRIFFITHS, H. E. The Relation of Disease of the Gall Bladder to the Secretory Function of the Stomach and Pancreas 43
 BOLL, H. A Case of Idiopathic Cyst of the Common Bile Duct 43
 BUCKHAM, M. P. The Importance of Indirect Roentgen Findings in Chronic Infection of the Biliary Ducts and Gall Bladder 433
 ARBELL, I. Surgical Treatment of Diseases of the Gall Bladder 43
 FREILICH, M. An Unusual Case of Spontaneous Rupture of the Spleen Cured by Splenectomy 433
 42 VOYSTER, R. Surgery of the Spleen. Ligation of the Splenic Artery 433
 FOOT, N. C. Studies on Endothelial Reactions Changes in the Distribution of Colloidal Carbon Noted in the Lungs of Rabbits Following Splenectomy 433

Miscellaneous

- 4 KELLY, W. M. Penetrating Wounds of the Abdomen 433
 41 RANNEY, J. L. The Diagnosis of Obscure Chronic Abdominal Conditions 434
 4 LARSEN, A. Segmental Localization of Pain Through Paravertebral Neurotome Injections as Differential Diagnostic Method in Intra-Abdominal Disease 435
 4 VICK, L. R. Pericapsulotomy as an Aid in the Diagnosis of Subdiaphragmatic Conditions 435
 4 C. C. A. Retroperitoneal Cysts 435
 COLLINS, A. W. Migratory Tumors of the Abdomen 435

SURGERY OF THE EXTREMITIES

Conditions of the Bones, Joints, Muscles, Tendons, Etc.

- 45 PARK, E. A. Certain Factors Causing the Deposition of Lime Salts in Bone 496
 436 BLOODGOOD, J. C. Bone Tumors. Sarcoma. Periosteal Group. Schwannoma Type. Osteogenic. Methods of Diagnosis and Treatment 496
 436 KATZMAN, C. Sprains of the Large Joints of the Extremities 496
 437 VOLLMER, J. So-Called Craniopulsion of the Scapula 498
 437 KATZ, M. Sweeping Shoulder and Voluntary Dislocation of the Shoulder 498
 438 SATTA, F. Operative Treatment of Supracondylar Fracture of the Humerus in Children 498
 438 GIACCA, S. A Contribution to the Study of Rigidity of the Hand 499
 438 CARPENT, M. Cox's Plaster and Tuberculous Osteitis of the Neck of the Femur 499
 439 HAAS. Angioma of the Carpus of the Knee Joint 499

- HILLSTROM, J. So-Called Osteochondritis Dissecans of the Knee Joint 440
- BURDET, E. A Contribution to the Pathology (Arthritis Deformans) and Diagnosis (Arthro-Endoscopy) of Meniscus Injuries 440
- CANTALINI, M. A Rare Case of Hereditary Symmetrical Osteitis of the Lower Limbs 44
- WELZ, S. Functional Testing of the Lower Extremities with the Aid of T-Spring Balances 44
- AMATEURY, G. The Etiology of Koehler's Disease of the Heads of the Metatarsal Bones 44

Fractures and Dislocations

- LOURNA, A. A New Method of Treating Irreducible Acquired or Congenital Hip Dislocations 443
- AMELEY, D. A. The Lorenz Bifurcation Operation 443
- DEUTSCHLEIN, C. The Treatment of Old Congenital Hip Dislocations 443

Surgery of the Bones, Joints, Muscles, Tendons, Etc

- GAMBLISTON, G. R. Some Points in Reconstructive Surgery 443
- SCHWARTZ, E. The Anatomical Processes in the Regeneration of Tendons and in the Plastic Repair of Tendon Defects by Tendon, Fascia, and Connective Tissue. An Experimental Study 444
- MAIER, G. The Plugging of Bone Cavities with Free Transplants of Fat 444
- LEONARD, F. A Method of Facilitating Plastic Operations on the Deltoid Muscle 445
- SCHULZ, O. E. New Arthrodesis of the Shoulder 445
- WALKER, R. Partial Endosteal Resection in the Treatment of Spastic Contractures of the Hand in Infants with Hemiplegia 445
- RAUB, H. The Morstin Plastic for Contractures of the Fingers 446
- SCHULZ, O. E. Peri-Articular Fixation of the Knee Joint 446
- SPRENGER, G. The Question of Operative Procedures for Deformities of the Feet 446

SURGERY OF SPINAL COLUMN AND CORD

- HACKENBROCK, M. Congenital Curvature of the Spine as an Intra-Uterine Deformity of Weight Bearing 446
- MURPHY, W. J. Fracture of the Spine with Cord Involvement 446
- TURNER, H. An Unusual Case of Typhoid Spine with Symptoms of Spinal Cord Affection 447
- HOFMANN, V. A Prolonged Operation on the Vertebral Column. Thoughts on the Operative Treatment of Spondylitis 447
- LEIB, A. On Lumbar Arthritis 447

SURGERY OF THE NERVOUS SYSTEM

- POCROFT, L. Transplantation of Spinal Nerve Roots as Flaccid Paralysis 448
- LEIDY, E. P. Peri-Articular Sympathectomy 448
- HANFMAN, A. E. and CHRISTOPHER, F. Peri-Articular Sympathectomy 448

- CALLAN, C. L. Arterial Decortication 449
- TYLER, W. J. The Surgical Treatment of Chronic Scabies 450
- SOMMER, R. Carcinous Angiomas in the Peripheral Nervous System 450
- MARSHALL, N. W. Bilateral Resection of the Pododermic Nerves for Vulval Pruritus 457

MISCELLANEOUS

- Clinical Entities—General Physiological Conditions
- GLASS, E. Thromboses Due to an Ink Pencil 450
- VON BALOGH, E. A Contribution to Our Knowledge of Nose 450
- PILL, N. Observations on the Origin, Causation, and Treatment of Rodent Ulcer 45
- MCCONNELL, G. A Case of Multiple Myxoma 45
- BIRNICK, R. The Function of Connective Tissue in the Experimental Production of Cancer 45
- LANG, F. J. and KRAUSE, W. Cystic Osteoplastic Carcinoma as Compared with the Scirrhus Form 45
- KLEMPERER, P. Parathyroid Hyperplasia and Bone Destruction in Generalized Carcinomatosis 45
- BURNS, J. W. Chronic Endocervicitis and Its Treatment 465
- HOOD, M. R. Fibromas of the Ovary 467
- CURRIE, A. H. The Diagnosis and Relief of Sterility 467
- VON ALBRECHT, A. The Association of Different Malignant Tumors and Tuberculous in the Same Organ 468
- FULLERTON, A. Abscess and Pains of Renal Origin 474
- KRETSCHMER, H. L. Echinococcus Disease of the Kidney 477
- KETTER, L. D. The Mechanism of the Formation of Urinary Calculi 484
- Blood
- GUTHRIE, C. G., and HOCK, J. G. On the Existence of More Than Four Isoagglutinin Groups in Human Blood 453
- TYLER, M. and UNDERHILL, F. P. Does Menstruation Influence Blood Concentration 453
- LEONHARDT, A. The Theoretical Basis and Practical Application of Blood Pressure Estimations in Surgical Operations 453
- NEOLANDER, N. A. The Transfusion of Blood in Acute Posthemorrhagic Anemia 454
- SCHWARTZ, D. M. and SANBURY, J. M. Intra-peritoneal Transfusion with Citrated Blood. An Experimental Study 454
- KNOES, I. Uterine Secretion. An Experimental Investigation into Its Effect upon Coagulation of the Blood 46

Blood and Lymph Vessels

- CALZA, ARA, D. Wounds of the Common Carotid 454
- TYLER, H. A Case of Arteriovenous Aneurysm of the Subclavian Artery with Reversal of the Circulation of the Arm. A Contribution to the Functional Transformation of Blood Vessels 455

MILLER, W. The Treatment of Defects of the Walls of Blood Vessels by the Application of Rubber Protective Coverings	455	HALPERN ANDER L. Roentgen Carcinoma	459
General Bacterial Infections		WEBSTER, J. H. D. The Clinical Results of the Treatment of Malignant Disease by the X Rays	459
MILLER, R. H. Tetanus. A Report of 16 Cases in the Massachusetts General Hospital	455	WIRTH, F. A. Radium in the Treatment of Uterine Hemorrhage of Non Malignant Type	463
Surgical Diagnosis, Pathology and Therapeutics		HALL, O. D. The Use of Radium in Treatment of Cancer of the Cervix	466
CLARK, A. J. The Scientific Basis for Non Specific Protein Therapy	450	SEARS, N. P. A New Method of Making Ureteropyelograms	474
Experimental Surgery and Surgical Anatomy		OSBORNE, E. D. S. TRY LA, C. G. SCHOLL, A. J., and KOPPEL, I. G. Roentgenography of the Urinary Tract During the Evacuation of the Bladder	474
WILLIAMS. The Histologic Processes Occurring in Skin Implanted by the Brown Method	456	THURMAN, J. H. A. R. Treatment of Testicular and Lymphatic Thrombosis	49
Röntgenology and Radium Therapy		BALFOUR, J. W. Observations on the Results of Röntgen Therapy in Chronic Testiculitis	49
MORTON, R. Deep X Ray Therapy	457	Legal Medicine	
WITTE, H. I. James from Roentgen Rays to Deep Therapy	45	Responsibility for Payment of Physician in Accident Case	46

GYNECOLOGY

Uterus		H. VINES, L. W. Acute Complete Inversion of the Uterus	47
KROSA, I. Uterine Secretion. An Experimental Investigation into Its Effect upon the Coagulation of the Blood	46	Adnexal and Peri-Uterine Cystic Diseases	
T. VERNON, B. Antiradiation of the Uterus and Its Complications. New	46	HORN, M. R. Fibromata of the Ovary	467
WEISS, F. A. Radium in the Treatment of Uterine Hemorrhage of Non Malignant Type	463	External Genitalia	
GILES, A. E. The Indications For and the Results of Myonectomy	463	MASKER, N. W. Bilateral Re-section of the Pudendal Nerves for Vaginal Prolapse	467
BOVNET, A. The Modern Scope and Technique of Myonectomy	463	Miscellaneous	
GORDON, O. L. The Treatment of Hydrometra, Mole and Chorioepithelioma, with Consideration of the Relative Frequency of Each	464	T. LEE, M. and UNDERHILL, F. P. Does Venostasis Influence Blood Concentration?	463
BLUM, J. W. Chronic Endometriosis and Its Treatment	465	CURTIS, A. H. The Diagnosis and Relief of Sterility	467
MELSON, O. C. The Diagnosis of Cancer of the Uterus	466	VON ALBRECHT, A. The Association of Different Malignant Tumors and Teratomata in the Same Organ	468
HALL, O. D. The Use of Radium in Treatment of Cancer of the Cervix	466	BALLANTINE, H. An Explanation of the Actual Torsion of Internal Ovary and the Torsion of Ovary and Kneeling of the Umbilical Cord	468

OBSTETRICS

Pregnancy and Its Complications		Labor and Its Complications	
WALL, W. F. True Eclampsia and Renal Eclampsia	469	H. VINES, L. W. Acute Complete Inversion of the Uterus	47
D. VIDON, H. J. A New Procedure in the Treatment of Eclampsia	470	WALLACE, F. The Clinical Course of Eclampsia under Local Anesthesia with Temporary Fixation of the Uterus	471
MURPHY, R. D. Uterine Fibromyosarcoma Complicating Pregnancy	470	Newborn	
WEEK, L. B. The Cause of Tubal Pregnancy and Tubal Twisting	47	GREENHILL, J. P. The Association of Fetal Abnormalities and Deformities with Placenta Previa	473
HARRIS, E. M. Immediate Versus Delayed Operation in Cases of Collapse Following Ruptured Ectopic Pregnancy	47	WYCKOFF, J. Intraperitoneal Infusion	473
GOOD, G. L. and RICHARDS, T. K. Ovarian Pregnancy	47		

GENITO URINARY SURGERY

- Adrenal, Kidney and Ureter**
- WILL, W. F. True Felampous and Renal Eclampsia 469
- HANKER, H. A Case of Bilateral Subacute Suppurative Pneumococcal Paraneoplasia 474
- SEARS, N. P. A New Method of M Lining Uretero pyelograms 474
- FILLISTON, A. Aches and Pains of Renal Origin 474
- MAYER, R. H. The Use of Creatinin as Test of Renal Function 476
- BARNES, J. D. Gonococcal Infection of the Kidney 476
- BALL, W. G. Some Cystoscopic Appearances in Tuberculosis of the Urinary Tract 476
- CARTWOOD, C. H. The Treatment of Pyelitis 476
- HIRM, F. Experimental Hydronephrosis The Significance of Compensatory Hypertrophy and Dense Atrophy to Repair 476
- WATSON, E. M. Spontaneous Healing in Destructive Pyonephrosis Report of 7 Cases 477
- KAMPMACHER, O. F. A Hitherto Unrecognized Mode of Origin of Congenital Renal Cysts 477
- CLAWFORD, R. H. Polycystic Kidney 477
- KRETSCHMER, H. L. Echinococcus Disease of the Kidney 477
- CHENING, R. E. Leucoplakia of the Renal Pelvis 477
- STEVENS, W. E. The Diagnosis and Treatment of Malignant Tumors of the Kidney 478
- HUTCHER, F. The Operative Treatment of Cystic Dilatation of the Vesical End of the Ureter 478
- HEDGECOCK, L. Accidental Bilateral Occlusion of the Ureters 478
- BARNES, J. D. Observations on the Links of the Ureter 479
- HUTCHER, F. L. Conversion Renal Surgery Associated with Ureteral Structure Work 479
- HERBERT, R. H., and THOMPSON, A. Acquired Structure of the Male Ureter 480
- Bladder, Urethra, and Penis**
- CASPER, U. The Treatment of Ectrophy of the Bladder 480
- GERNER, W. J. L. A Review of 53 Cases of Bladder Stone Removed by Lithotomy 481
- KATO, F. The Treatment of Epithelial Tumors of the Urinary Bladder 481
- MULLER, A. D. F. Ligature in the Treatment of Affections of the Lower Genito Urinary Tract 481
- CLISTON, J. A. C. An Unusual Case of Traumatic Urethral Stricture 483
- Genital Organs**
- BARNES, J. D. HAYES, E. F. and SHEDDEN, W. M. Some Results of Prostatectomy 483
- Miscellaneous**
- OSBORN, E. D., SUTHERLAND, C. G. SCHOLL, A. J., and ROY, T. R. L. G. Roentgenography of the Urinary Tract During the Excretion of Sodium Iodide 484
- KRUEGER, L. D. The Mechanism of the Formation of Urinary Calculi 484
- TINNA, C. F. Cystic Calculi A Complex Surgical Problem Report of Case of Multiple Cystic Calculi 485

SURGERY OF THE EYE AND EAR

- Eye**
- WETZMAN, L. B. Pulsating Exophthalmos 486
- SMITH, W. B. An Experience with Some Cases of Foreign Body in the Eye Ball 486
- CHAMBERLIN, W. B. The Lachrymal Operation of the Lachrymal Sac 486
- ALLPORT, F. Industrial Eye Injuries 487
- LAVOIE, E. A Study on Strabismus 487
- PICKARD, R. A Method of Recording Diak Alterations and Study of the Growth of Normal and Abnormal Disk Cups 487
- Ear**
- SMITH, S. M. Acute Aural Diseases in Children 488
- EMER, J. F. S. and AUSTIN, G. The Operative Correction of Ear Defects by Epithelial Flaps 489

SURGERY OF THE NOSE THROAT AND MOUTH

- Nose**
- YAMANO, L. N. and LEVINSKY, I. B. Perforation of the Nasal Septum in Cocaine Smokers 489
- BARNES, C. and OTTENDAL, A. J. F. A Rare Chondroma of the Nose 489
- DOUGLAS, K., and BEATLEY, J. H. Sinus Disease and Lung Infections 489
- DAUBENY, H. Osteoma of the Accessory Nasal Sinuses T. New Contributions and Critical Collection Review 490
- MAYER, M. Carcinoma of the Ethmoid Bone With New Contributions on Ossification in Tumors 490
- SCHLITTLER, E. How may the So-Called Serious Accidents in the Irrigation of the Antrum of Highmore Be Avoided? 490
- Throat**
- DANZMAN, H. An Unusual Case of Carcinoma of the Larynx Predicted Carcinoma of the Larynx 491
- TRINDER, J. H. X Ray Treatment of Tonsillar and Lymphoid Tissue 491

BORD, E. Observations on Some Throat Conditions in Children	49	Summary of the Results Obtained at the Presbyterian, Memorial, and Roosevelt Hospitals, New York	4
BARKOCK, J. W. Observations on the Results of Roentgen Therapy in Chronic Tonsillitis	49	JONES, F. S. and V. W. G. B. Carcinoma of the Tongue: General Principles Involved in Operation and Summary of the Results Obtained at the M. Clinic	413
KLUM, C. F. Tonsillectomy and Its Complications	49	CRILE, G. W. Carcinoma of the Jaw, Tongue, Cheeks and Lips: General Principles Involved in Operations and Summary of the Results Obtained at the Cleveland Clinic	411
FOOT, F. A. Cysts of the Bara Pharynx	49	V. BALDWIN, F. A Contribution to Our Knowledge of Meas	430
REX, G. War Surgery of the Larynx, with Special Reference to the Work at Cape May	49	DARTON, B. C. Can the Medical and Dental Professions Agree on any Standardized Treatment of the Issues of Infection	463
J. ASH, A. Subcutaneous Avulsion with Oblique Tension of the Larynx After Burn	493		

Mouth

RE, G. F. Carcinoma of the Cheeks and Lips: General Principles Involved in Operations and	
---	--

BIBLIOGRAPHY

GENERAL SURGERY

SURGICAL TECHNIQUE

Operative Surgery and Technique	485
Aseptic and Antiseptic Surgery	493
Anesthesia	495
Surgical Instruments and Apparatus	495

SURGERY OF THE HEAD NECK

Head	495
Neck	497

SURGERY OF THE CHEST

Chest Wall and Breast	497
Trachea and Lungs	497
Heart and Vascular System	495
Pharynx and Esophagus	495
Miscellaneous	498

SURGERY OF THE ABDOMEN

Abdominal Wall and Peritoneum	495
Gastro-Intestinal Tract	499
Liver Gall Bladder Pancreas and Spleen	501
Miscellaneous	501

SURGERY OF THE EXTREMITIES

Conditions of the Bony Joints, Muscles, Tendons, Ligaments, etc.	502
Fractures and Dislocations	503
Surgery of the Bones, Joints, Muscles, Tendons, etc.	504
Orthopedics in General	505

SURGERY OF THE SPINAL COLUMN AND COELOM

	505
--	-----

SURGERY OF THE NERVOUS SYSTEM

	506
--	-----

MISCELLANEOUS

Chemical Factors—General Physiological Considerations	506
Scars, Vaccines, and Ferments	507

Blood	507
Blood and Lymph Vessels	507
General Bacterial Infections	508
Surgical Diagnosis Pathology and Therapeutics	508
Experimental Surgery and Surgical Anatomy	508
Radiology and Radiations Therapy	508
Industrial Surgery	508
Hospital Medical Education and History	508
Legal Medicine	509

GYNECOLOGY

Uterus	509
Adnexal and Peri Uterine Conditions	509
External Genitalia	509
Miscellaneous	510

OBSTETRICS

Pregnancy and Its Complications	510
Labor and Its Complications	5
Puerperium and Its Complications	5
Newborn	5
Miscellaneous	51

GENITO-URINARY SURGERY

Adrenal Glands and Ureter	5
Bladder Urethra and Penis	51
Genital Organs	5
Miscellaneous	513

SURGERY OF THE EYE AND EAR

Eye	513
Ear	514

SURGERY OF THE NOSE, THROAT AND MOUTH

Nose	514
Throat	514
Mouth	515

EDITOR'S COMMENT

AN index, ordinarily is a prosaic thing a necessary evil which from the standpoint of readability and interest is classed with statistical tables government reports and the dictionary. To the editors of the **ABSTRACT** the index means something much more. It represents in the first place, a studied effort to classify and group the abstracts of the preceding six months in such a form as to make them readily available for the busy surgeon. No one who has attempted a similar task will question the amount of time, patience, and painstaking effort required to prepare a satisfactory index of so many and varied subjects. Many surgeons read extensively few have a sufficiently retentive memory to say six months later where that interesting article on the repair of facial defects appeared, or who described so accurately the technique of the operation he wishes to perform on the morrow. A well prepared index of the best current literature promptly answers these questions. Simplicity, clearness, comprehensiveness then, are our first concern in compiling the index.

It serves a second purpose, of primary importance to the editors but ultimately of still greater significance for the reader. It is the constant aim of the **INTERNATIONAL ABSTRACT** to present to its readers a concise account of what is going on in the minds and clinics and laboratories of the world's leading surgeons. That is an ideal worthy of the best effort we can command. Many a man, as he reads his journals, shrugs his shoulders and says, "Same old stuff." Sometimes his criticism is justified but every month, from some laboratory in France, some clinic in England, some hospital in Germany, Italy, or Spain, from Canada or South America, from California or Connecticut or Colorado come contributions of interest, of importance, perhaps of far reaching significance, to the practitioner of surgery. Have we succeeded in recognizing them, and in pointing them out to our readers with the emphasis they deserve. The answer is in the index. It comprises the audit of our six months work, the measure of our success in presenting to our readers the means of keeping abreast of surgical progress.

We have taken at random from the index which appears in this number four important heads to illustrate how the subjects in question are covered

in a single volume of the **ABSTRACT** Breast Nerves Pregnancy Uterus

Breast, End results of operations for cancer of, 3, 4, 7, tuberculous of, 3, tumors of, 80, 200, influence of placenta on, 66, bleeding of, 66, effect of radiation, 117, regard to postoperative recurrence of carcinoma of, 67, treatment of recurrent inoperable carcinoma of, by radium and roentgen ray, 67, fibro-adenoma of, in male, pregnancy after operation for cancer of, 57, freedom from local recurrence following chemical removal of advanced carcinomas, 200, results and technique in treatment of carcinoma of, by radiation, 30, tumors of arising during pregnancy and lactation, 368, supraclavicular extension of operation for malignant disease of, 417, local recurrence following extirpation of carcinoma of, 4, 8, clinical cure of recurrence of carcinoma of, lasting more than five years after treatment, 117, roentgen ray, 4, 8.

Nerves, Methods for bridging defects in, and new method of, 10, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

Pregnancy, Clinical and embryological report of extremely early tubal attack of intra uterine ectopic decidua reaction, 49, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

Uterus, Prolapse of, with pelvic relaxation, 4, relation of hypertension to fibroid disease of, 4, indications for total ablation in certain cases of rupture of, 4, significance of anastomosis of vessels of, as indicated by retrovenous anastomosis of artery and vein of due to aortic bone injury, 41, irradiation crises enucleation of fibroids of, 42, adenocarcinoma of fundus of, 42, end results of surgical treatment of carcinoma of cervix of, 4, intermittent respiratory hyperemia in infection of cervix of, 44, results of treatment of carcinoma of cervix of, 4, cancer in stump of cervix of forming metastasis in vermiform appen-

INTERNATIONAL ABSTRACT OF SURGERY

JUNE, 1923

ABSTRACTS OF CURRENT LITERATURE GENERAL SURGERY—SURGICAL TECHNIQUE

OPERATIVE SURGERY AND TECHNIQUE

Tackhoff, B. Hypertonic Glucose Solutions as Prophylactic Against Injurious Effects of Operation and Anesthesia (Hochprozentige Traubenzuckerlösungen, als Prophylaktikum gegen Operationen und Narkoseanfällen) *Zentralbl. f. Chir.* 93: 1112, 1117

On the evening previous to a major operation an of a sterile per cent glucose solution are slowly injected into the ulnar vein. Concentrations of from 20 to 50 per cent may also be used. The only unpleasant after effect is chilliness. The injection is given the evening before the operation because its optimal effect does not appear until twelve to twenty hours later. The pulse is strong and of good tension after the operation and the curve reaches the same height as before.

The effect upon the anesthesia is very favorable. The stage of excitation is lessened and may be completely abolished, the amount of anesthetic necessary is reduced, and nausea and vomiting are prevented. If the injection is not given until after the operation it is of little benefit. *WORMS, V. (Z)*

Melchior, E. The Physiology of Wounds (Ueber Wundphysiologie) *Beitr. kl. Chir.* 9

Melchior discusses the normal and pathologic physiology of wounds and the biology of healing processes. As vicarious replacement tissue the most important function of granulations is the provisional closing of the surface of the wound. This is directed partly against the outflow of body juices and partly against the penetration of substances from the exterior.

It has been assumed that the fine cellular processes in wound healing are set in action by hormones which are freed by the decomposition of the tissues in the region of the injury (Bier) and stand in close relationship to a phenomenon designated as cytotropism (Ross). Disturbances of wound

healing include those of general and those of local nature. In the former the constitution is the subject and severe general diseases play an important part also the condition of the endocrine glands. The causes which may contribute toward retardation or prevention of wound healing are therefore extraordinarily manifold. *NARICI, (Z)*

ASEPTIC AND ANTISEPTIC SURGERY

Rowell, H. G. The Surgical Importance of Iodine Idiosyncrasy and Poisoning. *Surg. Gynec. & Obst.* 93: 1112, 1117

Iodine is a disinfectant for skin and open wounds commonly used by the laity, and the medical profession the author calls attention to the fact that in rare instances patient may exhibit an idiosyncrasy to the drug its use being followed by conditions ranging from local lesions to death.

Reports of iodine idiosyncrasy in the literature deal largely with cases in which iodides were ingested those in which iodine was used externally being few. It is generally believed that a very small dose can produce the reaction hence the use of small quantity through the skin may be sufficient. Ormsby states that the physical reaction to the drug, and not the dose is the important factor. Coca maintains that the drug allergy is not essentially different in its underlying mechanism from that of idiosyncrasy toward non-medical substances. The reaction usually appears in a few hours but may be delayed for five to twenty days.

A case reported by Rowell was that of a man 55 years of age who was admitted to the Massachusetts General Hospital for gastric study and with the additional diagnoses of inguinal hernia of the left side and enlargement of the prostate. His history seemed favorable except for an attack of gonorrhea thirty-three years before which was followed by gleet. Ten days after his admission to the hospital he was operated upon for chronic appendicitis with hyperchlorhydria. A Bassini repair of the left

dis. 6 reasons of, and accident, 6 retroversion of, following delivery 30, after cesarean section, 30, action of ergot and solution of hypophysis os, 30, radical operation for marginal and femoral hernia with plastic use of, through abdominal cavity and simultaneous laparotomy for another condition, 7 use of suture as traction in vaginal operation for prolapse of, 36 pre-cancerous conditions of cervix of, 36 restoration of round ligaments to retroversion of 36 surgical treatment of postperal gas bacillus infection of 9 statistics and technique of treatment of fibromyoma of, by radiotherapy 30 unproved method of supporting bladder and vagina after suprapubic hysterectomy for prolapse of, 30 best method of treating of fibromyomata of by means of roentgen rays, 3 cancer of, 3 fistula involving bladder vagina, and, 33 treatment of cancer of with moderate irradiation, 33 statistics of carcinoma of 33, macroscopic as compared with clinical diagnosis of malignant neoplasms of, 363 pathology of bleeding of 363 treatment of cystocele rectocele, and prolapse of, 364 cesarean section for delivery of pregnant half of double, 370, effect of secretion of on coagulation of blood, 401 stress as aspects of (retroversion of, 46 radium in treatment of leucorrhoea of of non malignant type, 463 chronic inflammation of cervix of and its treatment, 465 diagnosis of cancer of 466 radium treatment of cancer of cervix of, 466, association of different malignant tumors and tuberculosis in, 468 fibromyomata of, complicating pregnancy 470 classical cesarean

section under local anesthesia with temporary fixation of, 473 acute complete inversion of, 473

The man who has turned to his recently published *Principles of Surgery or System of Surgical Diagnosis and Treatment* and found they lack some of the facts he needed most to know chiefly because of the time inevitably consumed in the collection, editing revision, and printing of standard textbooks, will be the first to recognize how completely these subjects as a whole, and how well recent developments along these lines are covered in the current volume of the *ABSTRACT*.

One word more. The abstracts of original articles are written by surgeons, men whose interest and activity in their particular fields are attested by their enthusiastic co-operation in the work of preparing the *ABSTRACT*. The reviews they present are intelligent, discriminating reports written with the one idea of presenting accurately and concisely the viewpoint and ideas of the author.

INTERNATIONAL ABSTRACT OF SURGERY

JUNE, 1923

ABSTRACTS OF CURRENT LITERATURE GENERAL SURGERY—SURGICAL TECHNIQUE

OPERATIVE SURGERY AND TECHNIQUE

Tschickel, B. Hypertonic Glucose Solutions as a Prophylactic Against Injurious Effects of Operation and Anesthesia. (Hochprozentige Traubenzuckerlösungen, ein Prophylaktikum gegen Operationen und Narkosechancen.) *Zentralbl. f. Chir.* 1922 xix, 47

On the evening previous to a major operation 10 ccm of a sterile 50 per cent glucose solution are slowly injected into the ulnar vein. Concentrations of from 20 to 50 per cent may also be used. The only unpleasant after effect is chilliness. The injection is given the evening before the operation because its optimal effect does not appear until twelve to twenty hours later. The pulse is strong and of good tension after the operation and the curve reaches the same height as before.

The effect upon the anesthesia is very favorable. The stage of excitation is lessened and may be completely inhibited, the amount of anesthetic necessary is reduced and nausea and vomiting are prevented. If the injection is not given until after the operation it is of little benefit. *WORME (Z)*

Nelck, E. The Physiology of Wounds (Ueber Wundphysiologie.) *Bertr. kl. Chir.* 9

Nelck discusses the normal and pathological physiology of wounds and the biology of healing processes. As vicarious replacement tissue the most important function of granulations is the provisional closing of the surface of the body. This is directed partly against the outflow of body juices and partly against the penetration of substances from the exterior.

It has been assumed that the fine cellular processes in wound healing are set in motion by hormones which are freed by the decomposition of the tissues in the region of the injury (Bier) and stand in close relationship to phenomena designated as cytotropism. (Roux) Disturbances of wound

healing include those of general and those of a local nature. In the former the constitution of the subject and severe general diseases play an important part; also the condition of the endocrine glands. The causes which may contribute toward retardation or prevention of wound healing are therefore extraordinarily manifold. *NAGELI (Z)*

ASEPTIC AND ANTISEPTIC SURGERY

Rowell, H. G. The Surgical Importance of Iodine Idiosyncrasy and Poisoning. *Surg. G. & Obs.* 1923 xxv, 9

As iodine is a disinfectant for skin and open wounds commonly used by the laity and the medical profession, the author calls attention to the fact that in rare instances a patient may exhibit an idiosyncrasy to the drug its use being followed by conditions ranging from local lesions to death.

Reports of iodine idiosyncrasy in the literature deal largely with cases in which iodides were ingested those in which iodine was used externally being few. It is generally believed that a very small dose can produce the reaction; hence the entry of a small quantity through the skin may be sufficient. Ormsby states that the physical reaction to the drug, and not the dose, is the important factor. Coca maintains that the drug allergy is not essentially different in its underlying mechanism from that of idiosyncrasy toward no medical substances. The reaction usually appears in a few hours but may be delayed for five to twenty days.

A case reported by Rowell was that of a man 55 years of age who was admitted to the Massachusetts General Hospital for gastric study and with the additional diagnoses of inguinal hernia, the left side and enlargement of the prostate. His history seemed favorable except for an attack of gonorrhea thirty-three years before, which was followed by gleet. Ten days after his admission to the hospital he was operated upon for chronic appendicitis with hyperchlorhydria. A Bassini repair of the left

inguinal hernia was also done. The patient, as given 8 oz. of ether and wide preparation with half strength tincture of iodine. After the herniotomy a large raised hematoma was noted in the abdominal wound. This was opened after a new table toilet and another local application of iodine. A few days later the patient was placed on the improvement but the next day he became irrational and was again placed on the danger list. Around both the hernia wound and the rectus wound there appeared purplish color which gradually spread. Death occurred ten days after the operation. Most of the abdomen was purplish, and purplish blebs developed on the lower limbs.

The prognosis depends chiefly on the severity of the symptoms, but in all cases serious, the mortality being very high.

There is no specific treatment. Starch, the alkaline antidote for iodine may be given in solution in the stomach. In the average case the usual methods of increased elimination are logical, and in the purpura type at least transfusion is indicated, often more than once.

On the basis of his investigation the author draws the following conclusions:

1. There is very definite iodine allergy closely related to, if not the same as, iodine poisoning and iodism and identical with the toxic effects produced by the iodides, to which iodine is converted on absorption.

2. In cases of allergy the symptoms closely resemble those of poisoning, the chief difference being the amount of iodine producing them.

3. While undoubtedly the condition is rare the precautions indicated re a carefully taken history and a reasonable effort to prevent absorption by restricting the iodine to limited area and removing it soon by means of alcohol. The palating of post-operative wound with iodine has unfortunate possibilities. In doubtful or suspicious cases some other disinfectant should be used.

4. In postoperative cases showing allergic symptoms, a test should be made for the drug and if it is found, appropriate treatment should be given depending on the severity and type of the symptoms.

5. The frequent use of iodine by the laity for the early sterilization of open wounds is associated with possible danger. In the surgery of compound fractures the full strength solution should be used with discrimination. A careful inquiry with regard to previous reactions will aid in avoiding fatal accidents.

6. In cases with marked idiosyncrasy even painting the skin with small amount of iodine may cause symptoms.

7. Transfusion, when used, should be repeated whenever the patient is losing ground.

8. Before iodine is used in the case of a patient who has been treated with iodides for syphilis or some other condition, his previous reaction to the drug should be determined.

9. I suspect of the efficiency of certain iodine salts as injections for urological X-ray examinations, we must recognize theoretical danger their use.

10. In industrial plant where iodine or its fumes are present, workmen sometimes show symptoms of acute or chronic poisoning. Therefore treatment of their injuries with iodine must be potentially dangerous.

11. Iodine need not be discarded as a disinfectant but its removal by alcohol immediately after its application is desirable. G. Oscar E. Briant M.D.

ANESTHESIA

Wiemann O. Clinical investigations on the Behavior of the Blood Pressure and the Pulse During and After Novocaine-Adrenalin Anesthesia (Klinische Untersuchungen über das Verhalten von Blutdruck und Puls während und nach Novocain-Adrenalin Anästhesierung). *Deutsche Zeitschrift für Chirurgie* 1930, 100, 30.

The purpose of the author in this investigation was to determine the behavior of the blood pressure and the pulse in an undisturbed operation performed under local anesthesia. Novocaine-adrenalin solution as used partly for local infiltration and partly for coelomic anesthesia. The pulse and blood pressure (systolic pressure determined with the Riva-Rocci apparatus) were recorded a few minutes previous to the induction of the anesthesia and the determinations were repeated thereafter at intervals of 5 minutes. Only those cases were included in the study in which no signs of general novocaine-adrenalin intoxication were observed during the induction of anesthesia or the operation, particularly symptom on the part of the nervous system. The influence of psychic factors was minimized as much as possible by the administration of morphine.

In a number of cases there were no marked changes in the pulse or the blood pressure either during the induction of the anesthesia or during the operation. Fluctuation in the blood pressure of 20 mm Hg. and a change of 1 cent beat per min. in the pulse were considered insignificant. In other cases, the anesthetic caused considerable increase in the blood pressure and, in some, considerable reduction. Those in which an increase occurred the pressure rose to 75 mm between 1 to thirty minutes after the beginning of the anesthesia. As a rule the rise was noticed first in from four to six minutes occasionally fall preceded the rise. In general, rise in the blood pressure did not as produced at all by the anesthesia would occur within the first ten minutes.

The cause of the rise in the blood pressure should be sought in the adrenalin content of the fluid injected. The pressure usually declined again very rapidly the decrease occurring as a rule from 1 to four minutes after the highest value was reached. In only a few cases did the high value persist for 15 to 20 minutes. In isolated cases the blood

pressure rose steplike in response to repeated injections of the novocaine-adrenalin solution. In others, further injections caused no renewed increase and in some, when the fall in the curve had already begun, it was not interrupted by other injections. On the whole, the blood pressure sank after the initial rise only to the original value and in the subsequent course of the operation showed only inconsequential fluctuations. In some cases, however, the curve was such that after the initial rise there was decrease below the original value in many instances considerably below the original rise. From the practical standpoint the question arises as to whether this fall in the blood pressure which frequently occurs before the operation is begun and reaches its maximum during the operation, denotes a dangerous condition. In the author's opinion, it does not as it is not sufficient to cause collapse. Collapse may occur however if at the time

of the deep fall in the blood pressure operative effects become active, especially hemorrhage.

Eight cases of aplanchnic anesthesia induced by the Lapps method showed no differences from cases of anesthesia of another type. STAM, (Z)

SURGICAL INSTRUMENTS AND APPARATUS

Rectenwald, J. J. A Thoracic Abdominal G. to. *N. York M. J. & Med. Rec.* p. 3, cxxvii.

This is an instrument to maintain a permanent opening into the pleura, lung, stomach, liver, colon, cecum, ovaries, bladder or uterus. It obviates the necessity for repeated incisions. It is so constructed that it can be introduced into a very small opening and is held in place by its outer and inner plates. It can be used when it is necessary to treat the interior of an organ repeatedly as for radium applications, instrumentation, etc. MARCUS HOWARD, M.D.

SURGERY OF THE HEAD AND NECK

HEAD

Blair, M. E. Fracture of the Skull and Its Complications. *Am. J. Surg.* p. 3, cxxvii, 13.

During the last decade there has been unusual opportunities for the study of head injuries because of the recent World War and the constantly increasing number of traffic accidents. While the war injuries were for the most part of a decidedly different nature from those seen in civil practice, the same principles of treatment are applicable to both types.

The author divides cranial and intracranial injuries into three classes: (1) fractures of the skull without brain complications; (2) fractures of the skull with brain complications; and (3) brain injuries without fracture of the skull.

The first class represents the simplest form of skull injury. In such cases the roentgen-ray examination is of the greatest importance. An interference brings the best results. Unless there is danger of complications, the treatment should never be surgical. To prevent the very serious complication of meningitis, all scalp wounds, however trivial, should be carefully inspected for the presence of a fracture running through the base of the wound. If such fracture is found, the scalp wound should be excised and the edges brought together without drainage.

The X-ray examination will reveal the presence or absence of depressions involving the inner table or of detached pieces of bone within the brain substance. If depression is found, it should be raised as soon as the patient's condition will permit the operation. In this procedure it is often necessary to remove a considerable amount of comminuted bone, leaving large defects in the skull. These defects should be closed with free bone transplant at a later time. It is also imperative to remove bone spicules from the brain substance.

The second classification, that of fracture of the skull with brain complications, and the third classification, that of brain injury without skull fracture, differ only in so far as injury to the bony structures is concerned and therefore may be considered together. The treatment for such cases has been previously described.

Immediate injuries to the brain or its blood vessels are due to laceration, edema, and hemorrhage and remote injuries to gliosis, scar or cyst formation, etc. Modern technique has not arrived at the stage of perfection permitting brain suturing. The second and third causes of immediate injuries, edema and hemorrhage, may be considered together as both are apt to produce cut cerebral compression.

Some very illuminating experiments demonstrating the effects of cerebral compression have been performed by Kocher, Hill, Cushing, and others. In man these experimental phenomena are at times very accurately reproduced by cerebral hemorrhage or edema.

Numerous factors enter into the recognition of cerebral compression but history of injury followed by protracted unconsciousness and increased pulse pressure and the presence of one other symptom is sufficient to establish the diagnosis.

The ideal method of remedying intracranial hemorrhage would be to ligate the bleeding vessel and evacuate the clot, but this cannot be done as it is still impossible to localize subdural hemorrhages accurately. Therefore the treatment must be symptomatic and expectant.

A procedure frequently mentioned in the literature is lumbar puncture. The author states that in cases of this kind lumbar puncture is dangerous under taking and as the cerebrospinal fluid quickly reforms its therapeutic value is at least very doubtful.

GEORGE E. BRILEY, M.D.

Graves, J. Fracture of the Skull Base with Superficial Hemorrhage on the Opposite Side.
Report of an Interesting Case. *Kent's M. J.* 1911.

The patient the day after the injury presented a fracture of the skull base with a large laceration of the scalp on the left side of the head. There was a large amount of blood on the scalp.

A fracture of the base of the skull was found on the left side, extending from the base of the skull to the right side of the head. There was a large amount of blood on the scalp.

There was a large amount of blood on the scalp. The patient was in a state of shock. The heart was hypertrophied and the lungs were congested.

The patient died on the third day after the injury. The autopsy showed a large amount of blood on the scalp and a fracture of the skull base.

Gray, W. J., and Harvey, E. C. The Regeneration of the Meninges. *Ann. Surg.* 1911.

The present work is a study of the regeneration of the meninges. The authors have found that the meninges regenerate after removal.

The authors have found that the meninges regenerate after removal. The regeneration is complete and the meninges are restored to their normal state.

The authors have found that the meninges regenerate after removal. The regeneration is complete and the meninges are restored to their normal state.

The authors have found that the meninges regenerate after removal. The regeneration is complete and the meninges are restored to their normal state.

The authors have found that the meninges regenerate after removal. The regeneration is complete and the meninges are restored to their normal state.

Haithorn, C. O. Cerebral and Cerebellar Hemorrhages in Apparently Healthy Adolescents and Children. *J. Neuro. Surg.* 1911.

The author reports on the occurrence of cerebral and cerebellar hemorrhages in apparently healthy adolescents and children. The cases are reported as follows:

The first case is a boy, aged 15, who died of a cerebral hemorrhage. The second case is a girl, aged 12, who died of a cerebellar hemorrhage.

The third case is a boy, aged 10, who died of a cerebral hemorrhage. The fourth case is a girl, aged 8, who died of a cerebellar hemorrhage.

Magnus, H. W. The Pathology and Pathology of the Brain. *J. Neuro. Surg.* 1911.

The author discusses the pathology of the brain. He discusses the various types of brain disease and the changes that occur in the brain as a result of disease.

The author discusses the pathology of the brain. He discusses the various types of brain disease and the changes that occur in the brain as a result of disease.

Lundberg, S. Increased Cerebral Pressure with Fat Embolism (Gestörter Hirndruck bei Fett embolie) *Acta chir Scand* 9 4v 37

Fat embolism is the most common form of embolism because it occurs frequently in fractures of marrow containing bones and occurs also in injuries of the soft parts. Only the cerebral form produces the more serious symptom leading usually to death. A case is reported in which contrary to previous observations no led increase in the pressure of the cerebrospinal fluid resulted.

The patient was a farmer 35 years old who was injured by the trunk of a tree falling on his right leg. A few hours after the injury there was rise in the temperature to 38.6 degrees C in spite of the fact that the fracture was uncomplicated. Headache and sleepiness soon developed. The temperature rose still higher and the sleepiness increased to complete coma. Repeated lumbar punctures revealed a pressure of 400, 300, and 300 mm of water. Neither lumbar punctures nor a craniotomy caused any improvement. The patient died four days after the injury. At autopsy very numerous fat emboli and small hemorrhages were found in the brain. Fat embolism was present also in the lungs, but in smaller numbers.

This was a typical case of cerebral fat embolism ending fatally fourteen days after the injury. The increase in the pressure of the cerebrospinal fluid to 400 mm of water is of particular interest as up to the present time increase has been considered a sign indicating the presence of fat embolism. Death from cerebral fat embolism the brain shows hyperemia, edema and hemorrhages. The requirements for an increase in volume in the cranial cavity are therefore present. Lumbar puncture is an important therapeutic measure. The injury to the brain produced by the pressure is slight in comparison to the primary injury produced by the fat embolism. The assumption is perhaps justified that after the lowering of the intracranial pressure the blood comes easier to the blood to carry the fat droplets lying in the brain into the general circulation.

SCHUMMER (Z)

Fay T. and Grant, F. C. Ventriculocopy and Intraventricular Photography in Internal Hydrocephalus. *J Am Med Ass* 9 3 1922, 46

The authors report the case of a boy 12 months old, who was brought to the hospital by his mother with the request that something be done to check the progressive growth of his head. The child's birth had been difficult, labor having continued for three days before delivery was effected by means of forceps. The mother first noted that the child's head was larger than normal four months later. For the next six months it had been gradually increasing in size. On the child's admission to the hospital his head measured 44 cm in circumference and 4 cm from the glabella to theinion. The forehead was massive and the face small. The general physical condition was excellent.

In this particular case the main object of treatment was to establish an outlet through the corpus callosum for the relief of the acute internal hydrocephalus. An approach through the dilated ventricle with an operating cystoscope was suggested. The operation was performed under light anesthesia. Clear fluid under considerable pressure escaped. The cannula was then removed and no cystoscope was inserted to obtain a view of the ventricle walls. The wound was closed after a sufficient amount of fluid had escaped to relieve the pressure. After slight reaction the child's condition returned to normal in a few days.

Two weeks later a second exploration was performed, this time on the left side, the posterior horn of the ventricle being entered from the parieto-occipital lobe. Only a small amount of cerebrospinal fluid escaped during this operation, evidently because the pressure had been relieved previously. One week later a third operation was attempted, but on account of the fact that the instrument which was to be used for cutting through the corpus callosum was defective it was not completed. Following this operation there was very little reaction and the child was in excellent condition. A favorable opportunity is being waited by the authors for the completion of the final stage of the third operation.

From the results obtained thus far the following conclusions are drawn:

1. Intraventricular photography and entri-culocopy are possible in the presence of dilated ventricles.

2. Little or no reaction follows such a procedure when it is properly conducted.

3. The diagnostic value of direct inspection of the ventricular cavities may prove of considerable importance in determining the location and the extent of the structural lesions causing deformities of the ventricles.

4. A satisfactory approach with regard to the area and the extent of the opening desired for callosal puncture under direct observation may be made through a dilated ventricle.

5. The photographic reproduction of structures or lesions within the ventricles requires exposure of at least forty seconds. GEORGE L. BRIDGES, M.D.

Davis, L. E. Lesions of the Paratrigeminal Area. *J Am Med Ass* 9 3 1922, 350

Attention is called to cases characterized by pain in the distribution of the trigeminal nerve, wholly unlike the pain of true major trigeminal neuralgia. These must be accurately differentiated because section of the sensory root will not give relief. They differ entirely from sphenopalatine neuralgia described by Sluder and may be differentiated by placing cocaine on the nasal mucous membrane overlying the sphenopalatine ganglion or directly injecting this structure.

The author reports two new cases and one from the literature in which pain in the distribution of the

Graves, S. Fracture of the Skull Base with Superficial Hemorrhage on the Opposite Side. Report of an Interesting Autopsy. *Kentucky M J* 933, xi, 634

The author reports the findings of the autopsy performed on a man 70 years of age to determine whether the cause of death was fracture or poplexy. There was a history of chronic nephritis and two attacks of poplexy.

A linear fracture of the base of the skull was found on the right side extending from the inner end of the sigmoid sinus to the occipital protuberance. There was no hemorrhage near this fracture but superficial basal hemorrhage was discovered on the left side under the frontal and temporal lobes.

There was very little arteriosclerosis and the blood vessels of the brain were not as degenerated as would be expected in a man of this age. The kidneys were cystic and fibrous, and the heart was hypertrophied and dilated.

The author concluded that the death was due to skull fracture that the hemorrhage on the opposite side was due to *force contraincuse* and that the inner side company was liable for death from accident.

MARCUS H HOWARD, M.D.

Sayed, W. Y. and Harvey S. C. The Regeneration of the Meninges. *Ann S R* 9, 3, xxvii, 70

Like the peritoneum, the dura will take care of its own defects and eventually close them over. The question of the formation of adhesions following natural repair of the dura has brought forth divergent opinions. The authors have therefore subjected the healing of the dura to experimental investigation. They carried out their experiment as on dogs.

Through trephine opening of the parietal bone section of dura was removed, care being taken not to injure the subjacent arachnoid and pex. The dura and bone defect were allowed to fill in with blood clot and the wound closed. Layers above it. After certain time interval the animals were sacrificed the brain was fixed *in situ* the tissues surrounding the wound were removed *en bloc*, and the gross and microscopic appearances of the structures were carefully studied. The protocols of eight experiments are given and illustrated by drawings and photomicrographs.

From these experiments the authors conclude that regeneration of the dura occurs by organization of blood clot.

Numerous phagocytes, polyblastic cells and fibroblasts invade the clot from the overlying temporal muscle to which it is intimately adherent. These cells penetrate through the arachnoid membrane where they become arranged in plane tangential to that surface and after week there appears limiting membrane resembling the endothelial lining of the normal dura. Further change is marked by the growth and condensation of connective tissues behind the living cells.

The cells invading the blood clot always come from the temporal muscle and adhesions do not form if the arachnoid has not been injured.

The authors conclude that defects made in the dura of the dog operatively without injury to the adjacent arachnoid heal in from one to two weeks and without the formation of adhesions.

V. G. BARNES, M.D.

Hawthorne, C. O. Cerebral and Cerebellar Hemorrhages in Apparently Healthy Adolescents and Children. *Practitioner* 9, cix, 433

The author reports the cases of two boys who died suddenly from cerebral and cerebellar hemorrhage respectively. The symptoms were similar to those of the apoplexy of adults. Similar cases in the literature are cited, but are relatively few as the condition is rare.

The etiology is very vague, no one cause being determined for all cases. Many theories have been advanced.

The conclusions drawn are as follows:

Children and young adults cannot be altogether excluded from the chance of intracranial hemorrhage.

The hemorrhage may occur at a time when the subject appears to be in good health.

3. The hemorrhage may cause immediate coma and early death, or may be followed by symptoms suggesting meningitis which persist for several days or weeks.

4. Apparently slight violence may be responsible for poplexiform symptoms and the latter may be delayed for several days. MARCUS H HOWARD, M.D.

Mogilnitski, W. The Parasitology and Pathological Anatomy of Brain Cysticercus (Zur Parasitologie und pathologischen Anatomie des Gehirns Cysticercus) *Hirnforschung Dyl* 933, iii, 137

In looking over the material of the Tissueological Institute the author found the following hitherto undescribed case in which fully developed tenia was discovered in cysticercus cyst of the brain. On one of the cysts was a very unusual structure 4 mm long and 1 mm wide which had broad base and narrow ped. From central cavity there radiated from seven to ten lateral branches terminating in small blind sacs. At about the middle was a small irregular nodule. The tissue was made up of round and stellate cells. Careful examination revealed fully developed tenia.

It is to be concluded that in this case the scolex assumed the rôle of the host. If the human organism there are substances which dissolve the egg envelope of the cysticercus and allow the tenia to develop and it is possible that in status thymicolymphaticus substances reformed in the tissues which change the wall of the cyst. The size of the vesicles (1 to 30 mm) with typical sten (7 to 1 lateral ramifications) indicates that this was a case of tenia solium cysticercus cerebri which had begun to develop into tapeworm. LOTTER (2)

last hours (pulse 180-200). Twenty-four hours after the operation the patient was in a semi-stupor with temperature of 102.4 degrees F., tachycardia, extreme restlessness, evidence of marked weakness, and shallow rapid breathing. The blood-sugar was found to be 0.5 gm. per 100 c. cm. (normal 0.9 to 1.0 gm. per 100 c. cm.).

Glucose was given very slowly intravenous (40 gm. in 50 per cent solution). An immediate improvement in the patient's condition was evidenced by her response to questions. Six hours later her condition again became desperate. Stupor developed, her color became ashen pale, her respirations very irregular. There was a constant mucous rattle in the throat. The pulse was 180.

A second injection into the arm of 5 gm. of glucose in 50 per cent solution was given. Again there was an immediate response by an improvement in color and regular respiration, but without return to complete consciousness as before. This improvement was not well sustained during the next six hours, but from this point on there was gradual betterment eventuating in complete recovery. Ten hours after the second administration of glucose the blood-sugar was 0.9 gm. per 100 c. cm. With the exception of the specimen taken the morning after the operation, the urine during the two days was negative for ketone bodies. It seems evident that in these cases we are dealing with a hypoglycemia rather than an acidosis, and that the latter condition is probably incident to the first.

Other observations have been made which reveal a marked reduction in blood sugar appearing twenty-four to twenty-six hours after operation and corresponding to the postoperative period when the greatest reaction occurs.

The rationale of the administration of glucose solution intravenously is suggested by these few studies, controlled and dependent upon successive blood sugar determinations. The author emphasizes the importance of high carbohydrate and high caloric diet in the preoperative treatment of exophthalmic goiter and the administration of 5 per cent glucose solution per rectum in the postoperative care.

ARTHUR L. SCHICKEL, M.D.

Floercken, H. The Method and Technique of Operation for Goiter (Ueber Methodik und Technik der Kropfoperation). *Beitr. Klin. Chir.* 9: 220-23, 1915.

Up to January 1921 Floercken operated on 265 cases of goiter coming from Westphalia and Frankfurt. These included thirty-nine cases of Basedow's disease and five cases of malignant struma. The rest were diffuse and nodular goiters. Hypertension and polycythemia was found

A bilateral resection with ligation of all of the four vessels was done in ninety cases. In sixty cases only three vessels were ligated. In the remainder hemistrulectomy with or without removal of the isthmus or combined with enucleation or partial resection of the other side was done. In one severe case of Basedow's disease only three vessels were ligated.

Goiterous patients with cardiac disturbances were prepared by bed rest, digitalis and 5 gm. of quinin hydrobromide twice daily. The operation is always done under local anesthesia induced with 5 per cent novocaine-adrenalin solution preceded one hour before by atropin and scopolamine or morphine and tropin. The collar incision of Kocher is used. In cases of large goiters and those previously treated by iodine rubbing or X-ray irradiation the muscles of the neck are divided as much as necessary. The superior artery, ligated not to the main stem but in its branches, in order to spare the superior laryngeal artery, a vessel important for anastomosis. The inferior branch is ligated with catgut where it crosses the carotid artery. A portion of the thyroid gland as large as a thumb is left behind with the posterior capsule which is sutured from above downward. A drain is left in for two days. The formation of hematoma and serum occurs in 1 per cent of the cases.

The author's total mortality was 9 per cent. Slight postoperative tetany occurred once. It is not yet known whether bilateral resection with ligation of three vessels is sufficient. In Basedow's disease, bilateral resection with ligation of all four vessels the operation of choice.

KLOPP (Z)

Dahmann, H. An Unusual Case of Carcinoma of the Larynx. Pedicled Carcinoma of the Larynx (Ein seltener Fall von Larynxcarcinom gestieltes Larynxcarcinom). *Zucker f. Laryng. Rhin. etc.* 9: 21.

A case of pedicled carcinoma of the larynx springing from the right aryepiglottic fold is reported. The tumor reached the size of a hazel nut without showing any tendency to degeneration. The larynx itself was practically uninvolved, even at the site of the attachment of the tumor, but there were metastases in the glands on the right side of the neck and involvement of the jugular vein and the carotid artery.

The tumor was extirpated with the aid of suspension laryngoscopy; the glands were removed and the jugular vein was partially resected. Because of the patient's age (53 years) the carotid artery was spared. Irradiation was given after the operation.

Up to the present time only five similar cases have been reported.

M. KROOK (Z)

the fistula and cavity injected with some opaque fluid. The mixture Eggers found most satisfactory consists of 20 per cent bismuth subnitrate in cottonseed oil to which 3 per cent acacia is added.

Most of the so-called complications of chronic empyema are in reality complications which developed during the acute stage and were carried over into the chronic stage. The most common of these is anemia. Among the other true complications the most important are endocarditis, myocarditis, and multiple arthritis.

Treatment to improve the general health should be coincident with attention directed to the local condition. Nourishing food, fresh air and sunshine, graduated breathing exercises, and encouragement of a general hopeful attitude constitute the essentials. The local treatment depends upon the condition found upon the patient's admission to the hospital. Eggers uses the Carrel-Dakin treatment in all cases, at the same time correcting the underlying conditions. While he does not believe that Dakin's solution materially shortens the course of the disease in the acute form, he is of the opinion that it has certain advantages. It keeps the wound clean and does away with foul smelling pus, thereby preventing the absorption of septic material. With regard to chronic empyema, on the other hand, Eggers believes it has a beneficial effect. He advocates the regular routine recommended by Carrel. After seven consecutive negative cultures, the treatment may be discontinued and the wound sealed. At the end of a week, it is usually found nearly closed. After this it requires only simple sterile dressings. During the period of irrigation special care must be taken to arrange the dressings so as to keep the patient dry and prevent skin irritation. In a few of the cases reviewed, nausea, arthritis, and an unexplainable elevation of the temperature occurred but disappeared when the irrigation was discontinued.

Of the 9 patients, 4 also had a superficial fistula and were treated by complete excision of the tract and surrounding tissues. The others were treated by the Carrel-Dakin method as long as there was reason to believe it would lead to healing. In sixty-two cases which showed no tendency to heal, conditions interfering with healing were found. The patients were therefore subjected to radical operation.

Of the remaining 18, 14 healed in an average of one hundred and sixteen days from the last operation and fourteen were transferred unhealed. In these unhealed cases the chances for healing were good; they merely required more time and were therefore not operated upon.

McMILLON HARRIS, M.D.

Sadler J. E. A Study of the Cases of Carcinoma of the Mammary Gland Operated upon by Myself and the Final Result Obtained in Them. *S. of Gynec. & Obs.* 1913, XXXIV, 15.

The author reports upon a series of seventy cases of carcinoma of the breast occurring over a period of twenty years. All of the operations were of the radical type including resection of the axillary and

supraclavicular glands when indicated. Some hopeless cases were submitted to operation unnecessarily. This could be remedied if a thorough X-ray examination of the mediastinum, lungs, etc. were made prior to operation to discover evidence of lung involvement.

Twenty-three of the patients (33.5 per cent) are alive and free from recurrence, and 14.3 per cent died from other causes without recurrence, making a total of 47.3 per cent in whom the disease did not recur.

The author cites two cases which demonstrate the variability in cancer malignancy. One was that of a woman 3 years old who was subjected to radical operation three weeks after she first noticed

a lump in her breast but died of metastasis six months later. In this case simple removal would doubtless have accomplished as much as the radical resection. The second case was that of a woman 65 years of age who for three years had a growing lump in the breast associated with axillary involvement, great emaciation, and ulceration and breaking down of the tumor. This patient was completely cured and died ten years later of pneumonia.

The author is of the opinion that a good many tumors considered recurrences are in reality new growths. In this connection he cites the case of a woman aged 60 years who had a radical resection of the breast for medullary carcinoma. Six years later she was operated upon for malignant disease of the urinary bladder. She recovered but ultimately died of carcinoma of the liver. The type of cell was different in each cancer.

Nine of the seventy patients whose cases are reviewed were under 40 years of age. Eight of these died of recurrence.

The prognosis seems best for the adenocarcinoma. That of the medullary type is least favorable.

WILLIAM J. PERRY, M.D.

Morton C. A. Malignant Diseases of the Breast. With Special Reference to the Supraclavicular Extension of the Operation. *Bull. M. J.* 1914, 78.

This article is a study of 5 cases of malignant disease of the breast in Morton's personal experience. Of these 24 are cases of glandular cancer, most of them of the scirrhous type, three were cases of very much less malignant duct cancer, and six were cases of sarcoma. In order to ascertain the late results, an attempt was made to trace 20 consecutive patients treated in the period between October 1908, and October 1913. As the survey was carried out in 1914 the minimum period following operation was three years. Of the 20 cases Morton was able to determine the late results in eighteen.

His desire was to discover the percentage of cases in which there was local recurrence because only this form of recurrence could have been prevented by more extensive operation. By local recurrence Morton means recurrence in the pectoral region, including not only the region originally occupied by the

Jackson, C. Bronchoscopic Clinic. Lung Suppuration Caused by the Prolonged Sojourn of Foreign Body. *Med Clin N Am* 923 vi, 990

Jackson reports four cases of foreign body in the bronchi to emphasize the following points:

Foreign bodies in the bronchus cause lung supuration simulating lung abscess, bronchiectasis, tuberculosis, empyema, bronchopneumonia, chronic bronchitis.

The signs as well as the symptoms clear up with surprising rapidity after the removal of the foreign body. Almost invariably the foreign body is found at the entrance to the area of lung suppuration. Hence its removal improves drainage.

In the cases reported in this article, as in hundreds of others, the foreign bodies were removed with ease and alacrity by means of the bronchoscope.

The length of time the foreign body had remained in the bronchus in Jackson's cases ranged from few weeks to thirty-six years. In most cases its presence had not been suspected. When a foreign body is radio-transparent, attention may be called to it by the obstruction emphysema. If foreign body has been present long time the signs of lung suppuration will be noted. Some radio-opaque bodies will escape detection because of the overlying shadow of the heart or of lung suppuration.

When previously healthy child has sudden attack of choking and coughing followed later by bronchitis and asthmatic wheezing an aspirated foreign body should be sought.

RALPH B. BITTMAN, M.D.

Hammer, G. Pyopneumothorax (Zur Lehre von Pyopneumothorax). *Frankf. rt. Zeitsch. f. Path.* 9 xxvii, 50

On the occasion of the fourteenth meeting of the German Pathological Society the author exhibited series of frozen sections of the thorax preserved by the Kauterling method and pointed out their significance. Such sections are particularly valuable to demonstrate the conditions of pneumothorax.

This article contains an illustration of a frozen section made in case of exudative pneumothorax of the most extreme grade occurring in a man 3 years old who had a family history of tuberculosis and died of tuberculosis. The diagnosis of exudative pneumothorax was verified by the distinct splashing noise noted when the upper part of the body was shaken. Autopsy showed extensive metastatic and mesenteric tuberculosis. The cross section of the frozen thorax revealed advanced pulmonary tuberculosis with the formation of cavities and rupture into the right pleural cavity in which an exudative pneumothorax had developed. The exudate, amounting to about 3.5 liters had pushed the diaphragm downward and caused marked displacement of the mediastinal organs to the left. The diaphragm formed an almost straight line rising obliquely upward from the right side to the left. The displacement of the mediastinal organs was so great that in the region of the heart the vertical

column could be grasped from the right pleural cavity. Other interesting features were an indentation of the wall of the right auricle and kinking of the ascending venous cava.

The specimen shows clearly how the so called tamponade or choking of the heart may be produced, not only by effusion in the pericardium, but also by effusion in the right pleural space. It demonstrates further that single glance the results of the serious functional disturbances caused by the anatomical and topographical changes of the thoracic organs, viz. (1) extreme difficulty in the gaseous exchange in the lungs, and (2) extreme difficulty in and eventually arrest of the circulation due to compression of the right auricle and kinking of the ascending venous cava. (Z)

Goetze, O. The Radical Phrenicotomy as an Independent Therapeutic Measure in Unilateral Pulmonary Phthisis (Die radikale Phrenicotomie als selbständiger therapeutischer Eingriff bei einseitiger Lungenphthise). *Klin. Wochenschr.* 9, 2, 1, 4496-444

The author reports on the severe cases of pulmonary tuberculosis treated by unilateral phrenicotomy at the Frankfurt clinic. He emphasizes the harmlessness of this procedure. The diaphragm is paralyzed in such a way that total trophy of the muscle follows. As a result of this paralysis, the diaphragm rises more and more into the position of expiration. At the same time the thoracic cavity is diminished in its vertical direction as a result of the shrinkage of the diseased lung.

Goetze obtained surprisingly good results in his own cases. He states that the phrenicotomy should be done with the induction of the pneumothorax.

JENN. (Z)

Oertsmeyer, K. The Mobilization of the Entire Shoulder Girdle as an Aid to Thoracoplasty for Pulmonary Tuberculosis (Die Mobilisierung des ganzen Schultergürtels als Hilfsmittel bei der Thoraxplastik gegen Lungentuberkulose). *Zentralbl. f. Chir.* 9, xii, 304

To mobilize the shoulder girdle from the thorax to facilitate approach to the first rib the author makes a Z-shaped skin incision from the sternal end of the clavicle to the vicinity of the insertion of the pectoralis major muscle on the humerus, from there along the outer lower border of this muscle almost up to the costal arch, and from there to the twelfth rib posteriorly. The pectoralis major and minor muscles are then divided close to their sites of insertion. The individual serrations of the anterior serratus muscle are separated from the ribs, and the latissimus dorsi muscle is incised on its lower lateral edge corresponding to the lower portion of the skin incision. The next step consists in blunt dissection of the pectoral muscles forward and of the serratus and latissimus muscles toward the back. Thus having been done the arm and shoulder girdle are drawn upward and the subclavian muscle separated

MISCELLANEOUS

Baktery F. C. An Experimental Study of the Cause and Effects of Immobility of the Diaphragm. *N York M J & Med Rec* 93 1916, 30

The author produced immobility of the diaphragm experimentally by three methods (1) by causing simple pleurisy with effusion by means of an irritant (2) by causing pleurisy with effusion by means of tubercle bacilli alone or with staphylococci, and (3) by freeing the phrenic nerve with ethyl chloride.

In the production of simple pleurisy with effusion twenty rabbits were given an intrapleural injection of 5 cm. of 10 per cent aqueous solution of peptone. This produced rapid exudation of serum into the pleural cavity usually of such an amount as to cause great dyspnea and embarrassment of the heart action and necessitating aspiration in from eighteen to twenty-four hours. Fluoroscopic examination of these animals during the exudation revealed the effusion upon the affected side. The diaphragm was in a low position, motionless and flattened, its normal convexity being entirely destroyed.

Inversion of the animal with resultant gravitation of fluid away from the diaphragm caused the diaphragm to assume its convex form and reestablished its motion. Following two or three aspirations the exudation ceased, and from the tenth to the twentieth day examination showed no or little fluid though the diaphragm remained immobile and in a low position.

At postmortem examination the chest was found retracted. The lung was adherent throughout its lower half where adhesions were numerous and heavy. The diaphragm was lower than normal, appearing as a straight line from the midline of the chest to the thoracic wall. Electrical stimulation of the phrenic nerve caused contraction of the diaphragm. On section, atrophy of the diaphragm muscle was found. There was wasting of the fibers with

collapse of the sheath and increased fibrous tissue. The diaphragm was therefore immobile because of (1) increased intrathoracic pressure and fluid, and (2) disease of the diaphragmatic muscle itself and (3) the presence of adhesions.

In the second series of experiments 5 cm. of distilled water containing virulent tubercle bacilli were injected into the pleural cavity. From the eighth to the tenth day fluoroscopic examination showed slight haziness on the side injected, but the diaphragm was functioning. The haziness gradually increased. About the twenty-fourth day slight effusion was observed. This accumulated slowly varied greatly in amount but in no case was more than 5 cm. and was usually bloody. Following the appearance of the fluid the diaphragm was motionless in practically every case, but it again functioned upon aspiration of the fluid. In these cases there was immobility of the diaphragm in the absence of fluid. The postmortem findings were very similar to those in the first series, the adhesions being present about the lower half of the lung and the muscle fibers of the diaphragm showing definite degenerative changes.

In the third series of experiments the phrenic nerve was exposed in the neck and ethyl chloride was applied for period of minute and half. Immediately after the operation the motion of the diaphragm decreased and at the end of ten hours was entirely absent. In this condition the diaphragm was in a high position of paralysis and showed a greater convexity than normal. Readings of water manometer after freeing of the phrenic nerve showed an increased positive pressure in the chest cavity. The immobility of the diaphragm persisted for from five to seven weeks. Section of the diaphragm showed atrophy of the muscle fibers.

In the author's opinion immobility of the diaphragm is produced not by a single factor but by the mechanical pressure of the fluids, the presence of adhesions and the disease of the diaphragm itself as shown by the histologic changes coming together.

RAULPH B. BRETHERMAN, M.D.

SURGERY OF THE ABDOMEN

ABDOMINAL WALL AND PERITONEUM

Wolff, G. The Pathogenesis of Torsion of the Omentum (Beitrag zur Pathogenese der "Nastor mon"). *Beitr. Klin. Chir.* 93 1916, 93

As 90 cases of torsion of the omentum have been reported a typical picture of this condition has become identified. Torsions of the omentum are divided into torsions with irreducible hernia, those that are associated with an empty hernial sac and those which occur without hernia. The condition is associated in some way with hernia in 90 per cent of the cases. In cases of hernia which have been present for years and suddenly become irreducible showing all the signs of peritoneal irritation, the diagnosis of

torsion of the omentum is made easily. When the hernial sac is empty the diagnosis is difficult.

The author reports the case of a man 46 years old who had had an inguinal hernia for many years. On the day of his admission to the hospital the hernia broke through. Attempts at reduction for five hours failed and the physician was without success. There was no visible peristalsis, but a large hernial mass extended into the scrotum. At operation, which was done once, the hernial contents were found to be bluish red omentum which, twisted like an umbilical cord, passed upward into the abdominal cavity in a band as thick as the little finger. This band was resected. During the after treatment pulmonary embolism developed, but otherwise recovery.

was uneventful. The tip of the omentum was twisted 360 degrees seven times.

Twisting of the omentum without any hernial sac is rare. According to P. yr the cases may be divided into the simple and the complicated. The latter are those in which the omentum is adherent to other abdominal viscera. A case belonging to the second group is reported as follows.

The patient was a woman 22 years old who had had attacks of pain in the region of the stomach for four years. During the last three months, they had become more frequent. There was no reason to suspect gall stones. At operation a gall bladder filled with numerous small stones and without adhesions and a section of omentum drawn into a lip, the only part of the omentum left hanging from the transverse colon were found. The tag of omentum was resected because of the twisting of its pedicle. It turned 270 degrees on pedicle 1 cm broad.

In this case the torsion was entirely intra abdominal. Although there was no inguinal hernia on the right side the latter had absolutely no relationship to the omental tag. A lumpy thickened omental tag with a thin pedicle is predisposed to such torsion. It is of little importance whether the lumpy change originated as a hernial sac or owes its origin to inflammatory processes. Only the chronic stages caused by the torsion bring the diverse picture of the torsion to an acute stage. In the second case reported in this article the attacks of pain were due probably not to the torsion but to the traction exerted by the adherent omentum. There is therefore a clinical latent period, a fact which agrees with the findings in animal experiments made by Pa. and Litzner. In cases of hernia, the lumpy change of the omentum in the sac is the prerequisite for the development of omental torsion. If hernial protrusion results from the abdominal pressure the omentum may pass through the inguinal canal, the result of twisting motions. Schwenk (2)

Bacon, D. K. *Experiments in the Treatment of Peritonitis. Vermont Med. J. 93, 43*

In any consideration of peritonitis the most important single item is the question of drainage. The various mesenteries form membranous dividing walls separating the abdominal cavity into several definite regions which form natural paths for the extension of inflammation. The mesenteries themselves are both guides and barriers. When the peritoneum attempts to wall off an infection it is best to withhold food in order to decrease peristalsis. The administration of cathartics and purgatives is also to be avoided, but enemata if judiciously used may be given after the first twenty-four hours.

Morphine is of great value as an intestinal sedative and for the relief of pain. Abdominal applications, either hot or cold have an analgesic effect and produce vascular dilatation. Custom dictates that the patient be placed in Fowler's position. A important part of the treatment of peritonitis is the daily administration of 6,000 ccm or more of fluid.

This is best given through the skin. Water given by mouth may cause undue peristalsis.

In neglected cases of peritonitis in which feces is already present the outlook is unfavorable even when operation is performed. Frequent aspiration of the stomach may be of some value. Enterotomy is the only operation possible. H. W. Fox, M.D.

Jungeblut, C. W. *The Bactericidal and the Inhibitory Power of Ether. A Contribution to the Study of the Ether Treatment of Peritonitis. (Ueber die bactericide und entwickelungshemmende Kraft des Aether. Ein Beitrag zur Frage der Aetherbehandlung der Peritonitis.) Zentralbl. f. Bakteriol. 9, 170, 171, 56*

To determine the value of ether treatment in peritonitis the author made bacteriological tests in vitro. He found that concentration of 1 in fluid medium (bouillon culture) did not kill the investigated bacteria (paramecocci, bacillus coli streptococci and staphylococci ureas and albus) even when they were exposed to it for hours. The bactericidal power increased with an increase in the temperature. Ether vapor was more quickly effective than ether bouillon mixture. The author could not substantiate Signet's results. The addition of 1 ccm of ether to solid media killed paramecocci and bacillus coli and weakened the streptococci, but had no effect on staphylococci.

However, while the bactericidal effect of ether was found to be slight, the tests on fluid and solid media showed a marked inhibitory effect. Therefore the author considers the introduction of ether into the abdominal cavity of value in threatened or beginning peritonitis. Tarnow (2)

Jensen, J. H. and Pfeiffer, D. B. *Ochsner Treatment in Peritonitis. J. Surg. 423, 10, 14*

Reference is made in this article to the varying changes in attitude of leaders in surgery to and the treatment of appendicitis and peritonitis by the Ochsner method. This method seems to be less generally accepted today than in 1916. The authors, however, have had considerable experience with this certain cases of diffuse peritonitis.

Statistics show a general lowering of the mortality of acute appendicitis in the past few years. In America it is generally agreed that intervention is indicated in the early hours of an acute attack, but in some European countries, notably in France, surgeons are divided on this subject into the interventionists, the abstentionists and the opportunist. The interventionist favors immediate operation regardless of the stage of the disease or the general or local condition. The abstentionist will not operate in the acute stage unless after a period of observation, it is evident that the condition has failed to improve or has become worse. The opportunist believes in immediate operation if the attack has lasted no more than thirty-six or forty-eight hours, but after that prefers to wait for improvement before making operation.

A study of the attitude of surgeons in general toward acute and established peritonitis indicates that they may be classified into three groups: first, those advocating a waiting policy in all cases of peritoneal infection after the first two days; second, those favoring operation when the symptoms, local and general, are unfavorable or grave; and third, a large group who advise against delay under any circumstances except those in which life is greatly endangered.

While adhering to the general principles of the Ochsmier treatment, the authors emphasize that it has certain limitations. First, it is difficult, and sometimes unsafe in young children because of early ascites from the starvation and sepsis, the lower vital resistance of the peritoneum at this age, and the greater danger in children of metastatic infections in remote regions. Second, immediate intervention is indicated when there is doubt as to the origin of the peritonitis, particularly when there is a possibility of the presence of perforative lesions of the gastrointestinal tract. Third, immediate operation is necessary when formerly localized abscess ruptures, as second localization rarely takes place. Three cases are cited to illustrate the septic character of the type last mentioned.

In cases of rupture of large appendix distended with pus or basal perforation of a patulous appendix permitting leakage of fecal matter into an unprotected peritoneal cavity, operation may be delayed beyond the forty-eight hour time limit set for immediate intervention, but assuredly no longer.

It is generally agreed that the management of the disease is properly placed in the hands of the surgeon. Sweeping statements regarding general methods are of little for the student mind, but the judgment of the individual surgeon, ripened by experience, shades the rigid application of these principles.

It is argued that early appendicular peritonitis should be operated upon without delay, trusting that the peritoneum will take care of the infection already liberated. It is argued that in this same type of case, rapidly subjected to anatomical and physiological rest, localization will occur and permit operation with relatively little risk. Reported results, however, do not show great difference in the mortality of cases treated by the two methods.

The mortality is highest in cases in which, when first seen, present symptoms of profound systemic toxemia, usually in the third day of the disease or later. Pre-operative rest is favored in this type of case as the best method of lowering the mortality.

Certain cases show no tendency toward localization and are lost by a waiting policy, viz. (1) those of young children, (2) cases of delayed and fulminating gangrene or perforation, and (3) cases of intra-abdominal rupture of localizing or localized abscess.

A summary of the opinions expressed in the literature of the past five years is an interesting review of the discussed view, held on this subject by leading men.

V. E. DUDMAN, M.D.

GASTRO-INTESTINAL TRACT

Rudolf A. Experiences in the Surgical Treatment of Gastropotosis (Erfahrungen ueber die chirurgische Behandlung der Gastropotosis) *Berl M Ch* 9 CCXV 3

The author recommends gastropexy on the basis of his experience in sixty-six cases (61.67 per cent cured, 26.7 per cent benefited, and 11.66 per cent not benefited). Of these, thirty-three were operated on by the Rovsing technique (53 per cent cured, 31.2 per cent benefited, and 50.6 per cent not benefited). In thirty-three cases the ligamentum teres was utilized according to the Perthes-Vogel method as modified by the author (7.5 per cent cured, 3.4 per cent benefited, and 7 per cent not benefited).

In Rudolf's modification the ligamentum teres is fixed to the anterior wall of the stomach with a few interrupted sutures 1 to 5 cm distant from the lesser curvature and covered by a continuous row of sutures. The free end of the ligament is then drawn through a small opening made with a scalpel in cartilage of the left costal arch. The insertion of the ligamentum teres in the liver is fixed in a similar manner to the right costal arch, but in this case the sutures applied very close to each other are sufficient. In certain cases, in particularly ptotic lobes of the liver resection of the lobes is undertaken. The best results are obtained by gastropexy in scoliosis.

VON RADWITZ (2)

Moynihan, B. Some Problems of Gastric and Duodenal Ulcer *Brit M J* 9 3

Moynihan reviews his experience of the past ten years in the surgical treatment of gastric and duodenal ulcer. He defines a chronic ulcer as visible and palpable lesion which has been present for months or years. The outstanding symptom is periodic and chronic epigastric pain. In a total of 78 cases there were 53 cases of duodenal ulcer (433 men, 98 women) and 164 cases of gastric ulcer (83 men, 81 women). Twenty-three patients had both gastric and duodenal ulcers.

Since 9 Moynihan has operated upon more than 500 consecutive cases of duodenal ulcer without a death. In every case the ulcer has been seen and demonstrated. The mortality in cases of gastric ulcer or gastric and duodenal ulcer treated by gastrectomy was 6 per cent. Only six of the cases of duodenal ulcers treated surgically were complicated by jejunal ulcer.

The diagnosis of duodenal ulcer can usually be made from carefully taken history. Surgeons have proved the great preponderance of duodenal over gastric ulcer. The diagnosis of gastric ulcer on the other hand, is more difficult. In these cases competent radiologist can be of great aid. The niche and notch in gastric ulcer and the deformity of the bulb in duodenal ulcer afford evidence of great value from diagnostic standpoint.

The average duration of symptoms was seven and one-half years in cases of duodenal ulcer (excluding

cases with perforation) and nine and one-half years in cases of gastric ulcer. Every patient had been treated medically during one or more of his attacks. Medical treatment is of great value in relieving the pain and curtailing the attacks but has invariably failed to give permanent healing of the ulcer.

Patients with irremovable gastric ulcers treated by gastro-enterostomy plus jejunostomy were fed through a tube directly into the jejunum. A food or liquids were given by mouth. The healing of the ulcer as controlled by X-ray screen examination has always been very slow, requiring from six months to more than three and one half years. The inter-relationship of abdominal disease can be properly demonstrated and suitably treated only by surgical intervention as in many cases gross disease in the appendix or gall-bladder antedates the ulcer. Oral sepsis always demands attention in patients presenting an ulcer syndrome. Medical cure seems powerless to prevent the recurrence of symptoms. Grave complications, chiefly hemorrhage and perforation, are apt to be associated with recurrent attacks.

In the Leeds Infirmary during the years 1901-1903 inclusive, seventy-five patients with gastric ulcer died from hemorrhage or perforation with peritonitis. In sixty the ulcer was of the chronic type. During the same period of time there were 20 cases in which death resulted from either hemorrhage or the perforation of duodenal ulcer. The full mortality of surgery is known. We are just beginning to appreciate the death rate among patients presenting repeated medical cures and dying several years later from grave complications of their latest chronic ulcers.

With regard to the incidence of cancer on an ulcer, the author states that an average of two thirds of the patients with gastric cancer gave a history, very suggestive of precedent ulcer. Of supposed chronic gastric ulcers 18 per cent have proved to be carcinomatous at the edge of the lesion. In one instance the raised, red, thickened edge of the ulcer showed on microscopic examination a columnar carcinoma on one side and an early scirrhous cancer on the opposite margin. According to McCarthy gastric ulcers with diameter of 1 cm or more are practically always malignant. Without doubt, chronic ulcer undergoing malignancy frequently grows to such a size as to obscure all gross evidence of its previous presence.

Surgical treatment of gastric ulcer has passed through many stages. Gastro-enterostomy has given good results in many cases but for the surgery of today the results are not good enough. Mayo has discarded the clean excision of the ulcer with the knife because of the large number of recurrent ulcers following it. Balfour's cautery excision he regards as admirable for small ulcers high up on the lesser curvature associated with pylorospasm. Gastrectomy he believes is the operation of choice in the great majority of cases. In his hands it has been both safe and excellent as regards the permanency of cure. No other operation yields such uniformly

good results. He uses the anterior no loop method. The jejunum is brought from the lesser across the transverse colon from left to right and applied to the divided stomach so that the proximal part of the jejunum joins the greater curvature.

Mayo has employed this method in every case since June 1910. There have been no deaths and only uneventful early and late convalescences. No ulcers have recurred. No dyspepsia symptoms have followed this operation.

This article is a critical and admirable record of master surgeon work in the field of gastric surgery.
JOSEPH W. NUNN, M.D.

Hardt, L. L., and Rivera, A. B. Toxic Manifestations Following the Alkaline Treatment of Peptic Ulcer. *Arch Int Med* 9, 3, 1913, 71.

Sippy attributes the chronicity of ulcer to the corrosive action of gastric juice and on this basis administers small amounts of alkali hourly over a long period (three to four weeks in the hospital and several weeks afterward). He says, "It may be helpful to know that in rare instances it has required the equivalent of 50 gr. (grams) each of calcium carbonate and sodium bicarbonate every hour midway between feedings and every half hour after the last feeding until 9 p.m. to control the free acidity."

With one exception, it has been the experience of the authors that when an attempt is made to control the acidity in certain groups of cases symptoms of toxemia usually appear. Thus far however no one has studied the etiology and symptomatology of the condition from the standpoint of blood chemistry.

From the patients with peptic ulcer who were observed in the Mayo Clinic from April 1911, to April 1913, forty-eight were selected for study and classified in three groups. Group 1 consisted of sixteen patients who were treated for one week by hourly feedings of milk without alkali and then treated according to the usual Sippy method. This experiment was made to determine whether or not the milk alone was a factor in causing the complicating symptoms. Group 2 consisted of sixteen patients who were placed directly on Sippy treatment and remained normal throughout the course. Group 3 consisted of sixteen patients who showed toxic symptoms while under the Sippy treatment.

In practically all cases a twelve hour specimen of urine (night) was examined microscopically for blood, pus, and casts, and chemically for albumin and sugar. The specific gravity was estimated and the renal function was tested by the phenolphthalein return. Blood urea, creatinin, and the carbon dioxide combining power of the plasma were also determined. These tests were repeated the day before additional food or alkali were given and again during the last week of treatment. If symptoms of toxemia developed, the laboratory data were again obtained. In Group 3 the blood urea was 50 mg or more for each 100 c.c.m. Creatinin determinations were not made unless the blood urea was 70 mg or

more. In one case the blood chlorides were also determined during the period of toxemia.

The chemistry of the blood or urine as not affected in the "milk control" patients in Group 1 or Group 2. The sixteen patients of Group 3 exhibited definite symptoms of toxemia.

Symptoms of intoxication are apt to arise at any time during the course of the treatment, within four or five days after the powders are given, not until the third or fourth week, or following the use of two or three additional 5 gr. calcium carbonate powders. Patients whose gastric acidity persistently remains uncontrolled may show symptoms early.

Before the patients developed the more serious symptoms they seemed unduly introspective and nervous. They were irritable and complained about things which previously they had overlooked. The first symptom was distaste for milk. In some instances headaches came on almost simultaneously with the dislike for milk, and at this stage it was usually difficult to persuade the patients to take the powder. The headache persisted through the entire syndrome becoming more severe as the subsequent complaints arose.

With the increasing dislike for milk, nausea became pronounced and the patient vomited on making efforts to take food or water. The vomiting may become alarming and is checked with difficulty usually only after repeated gastric lavage.

Dizziness is a common symptom even in the milder cases. Aching pain in the muscles and joints is a usual symptom. Respirations became slow, the pulse slightly accelerated, the face flushed and perspiration profuse. The patient lay in bed limp, apathetic, and very drowsy and was roused with difficulty. When the symptoms reached the point of nausea and vomiting (with few exceptions) the alkalis were stopped and the patient was put on 24-hour feedings consisting of milk, cereals, eggs, fruit juices, and meat broth. In six instances it was necessary to continue this treatment with small doses of alkali because toxic symptoms recurred after attempts to follow the Sippy régime.

During toxic manifestations the blood urea increased from 50 to 560 mg. for each 100 cc. and the creatinins from 2 to 5 mg. In the normal patients the carbon dioxide varied from 55 to 70 volumes percent in those exhibiting toxic symptoms from 65 to 75.

Albumin and casts were found at some time during the course of treatment in all of the sixteen cases of Group 3. In Groups 1 and 2 the blood was normal.

The gastric acidity was not controlled in any of the cases of Group 3 as rule it was high. The average total acidity during the period of toxemia was 78 and the free hydrochloric acid 48.

The toxic manifestations, laboratory data, and pathologic findings in three cases of Group 3 led to the supposition that alkaline treatment may precipitate definite toxic symptoms in patients with renal disease. In these three the blood urea rose to 300 or higher.

Undoubtedly a marked pathologic condition of the kidneys was being dealt with. In all three cases the gastric acidity remained persistently high. The average free hydrochloric acid was 68 and the average total acids were 78. The point is emphasized that alkaline therapy directed toward the complete neutralization of gastric acidity is not only out of the question but also harmful.

In the other thirteen cases of Group 3 there was no clinical or laboratory evidence of nephritis or nephrosis when treatment was begun, but symptoms of varying degrees of toxemia associated with renal involvement became manifest within a few days to a few weeks later. It is hardly justifiable to conclude that these patients had definite nephritis at the onset. A more probable assumption is that renal disease with toxic manifestations was the result of the alkaline therapy. It has not been definitely determined which one of the salts or metals is responsible for the toxemia. However the diet is not the cause as none of the patients on the diet alone showed toxic symptoms. The fact that in these cases the acids were persistently high brings up the question of variation in absorption, perhaps depletion of blood chlorides. These patients and patients with gastric tetany had similar blood findings with the exception that in the latter there was depletion of chlorides in the blood.

The problem as to whether or not true alkalois is produced by the large amounts of alkali given is yet to be solved. The hydrogen ion concentration was not determined in this study but on the basis of the high carbon dioxide combining power of the plasma and the administration of large quantities of alkali, the authors feel justified in applying the term alkalois.

Guy E. F. The Effect of Gastro-Enterostomy on Gastric Function as Interpreted by the Fractional Test Meal. *Bull. J. Surg.* 9, 3, 403.

The author has modified the Rebffuss technique of obtaining a fractional test meal by giving a pint of oatmeal for the meal and then withdrawing 3 cc. every fifteen minutes to obtain larger quantities. It is often necessary to employ pressure in the syringe which may cause minor hemorrhage of the gastric mucosa and thus introduce an element of error. Sixteen specimens are removed. Guy emphasizes the importance of filtering the specimen immediately before marked changes in acidity occur. In the following comparison A represents the titration figures of specimen filtered immediately and B those of the control specimen filtered after standing in the test tube for four to six hours at room temperature.

Example		Total Free HCl Acidity	
		A	B
Example	A	7	6
	B	7	7

In thirty-one of more than fifty cases examined the presence of an ulcer was confirmed at operation. In fourteen duodenal ulcer was found, in nine a pyloric ulcer and in three a gastric ulcer. The exact position of the ulcer in five is not known.

In fourteen of the twenty-six cases which were examined after gastro-enterostomy the acidity curves were obtained both before and after operation.

Gastric ulcer. The length of time during which tach could be recovered indicated that in cases of gastric ulcer the motility was reduced. Bile was present over longer periods than in the normal stomach. In cases of ulcers of the body of the stomach there was hyposecretion of acid.

Duodenal ulcer. In cases of duodenal ulcer the motility was increased even though the fibrous surrounding the ulcer encroached upon the pyloric ring. The presence of bile was less characteristic in this type. There was marked hypersecretion of acid, and the amount of resting juice as considerably increased.

Pyloric ulcer. In cases of pyloric ulcer the motility was definitely decreased as shown by the fact that starch granules could be recovered as long as three and three fourths hours after the meal. Absence of bile in the stomach seems to be a marked feature of these cases. There was hypersecretion of acid, but not so marked as in the cases of duodenal ulcer.

In study of the effects of gastro-enterostomy on the different types of ulcer it was found that satisfactory gastro-enterostomy always increased the rate of emptying. Five tests carried out on patients subjected to partial gastrectomy, a still more rapid evacuation, as noted, the stomach being empty on an average a third three fourths of an hour. In cases in which pain and vomiting recurred after gastro-enterostomy the emptying time was found to be 1 1/2 hours or longer and in one of these the stomach had ceased to function. After gastro-enterostomy for gastric ulcer there was usually marked lowering of the acid secretion, while after gastro-enterostomy for duodenal ulcer the decrease in acidity was less marked. The author does not agree with Sherren that duodenal excision is the cause of postoperative hyperacidity as he has demonstrated that high acid level after operation is but the natural result of pre-operative hypersecretion and is not affected by variations in operative procedure apart from the provision of an adequate stomach. *Previous W. Calkins M.D.*

Goldschmidt W. The So-Called Linitis Plastica (Zur Frage der sog. Linitis plastica). *Arch. f. kl. Chir.* 9, cxx 55.

The clinical and pathologico-anatomical picture of so-called linitis plastica is by no means clear although great deal has been written regarding the condition. Many authors emphasize the form of the stomach (leather bottle form, shrinking and thickening) paying little attention to its pathologico-anatomical aspects. It is therefore not surprising that numerous other gastric diseases

such as carcinoma, fibromatosis, syphilis, etc. are often included in the diagnosis of linitis plastica. This fact explains also the various opinions regarding the malignancy of the condition.

The author reports two cases. The second, particularly showed the picture of linitis plastica macroscopically whereas an infiltrating carcinoma with colloid cancer cells was found on microscopic examination. The discussion of the case Goldschmidt raises the question whether this lesion should be described as linitis plastica which it resembled macroscopically morphologically, or whether it should be designated simply as a colloid cancer according to the microscopic findings.

VOLLHARDT (Z)

Palugay J. Roentgenological Investigations on the Functional Behavior of the Stomach in the Various Types of Posterior Retrocolic Gastro-Enterostomy and Comparison of Its Value in Ulcer of the Stomach and Duodenum (Roentgenologische Untersuchungen des funktionellen Verhaltens des Magens bei den verschiedenen Arten der Gastroenterostomie retrocolica posterior und Vergleich ihrer Wertigkeit beim Ulcus ventriculi und duodeni). *Deutsche Zeitsch. f. Chir.* 1922, clxxx, 97.

Palugay has investigated roentgenologically the functional behavior of the stomach following the different types of posterior retrocolic gastro-enterostomy on the material of the Hochrepp clinic. On the basis of sixty-one cases he comes to the following conclusions:

In the selection of the type and position of the anastomosis the surgeon must consider whether the stomach is of normal size or dilated, and whether it has hook or cattle-horn shape. In the dilated stomach, he must consider to what extent the gastric wall will permit regression of the dilatation and whether adhesions are present at the pyloric portion which when the stomach is reduced in size, may produce change of form from hook shape to cattle horn shape. The first two points are determined by the X-ray examination and the latter by operation.

With the exception of those cases in which there is a ulcer of the cardiac or middle portion in an hour glass stomach, in which an anastomosis applied to the upper sac ought to produce favorable results, the following points should be taken into consideration in the performance of gastro-enterostomy:

In the hook stomach of normal size the choice between isoperistaltic and anisoperistaltic anastomosis applied at the caudal pole of the stomach should be governed only by the technical considerations. In cases of dilated hook stomach about pyloric adhesions the oblique isoperistaltic anastomosis comes up for consideration first of all and, secondly the vertical anisoperistaltic anastomosis. In cattle horn stomachs and dilated stomachs with pyloric adhesions—which may lead to a cattle horn form—anastomosis in the pyloric portion is preferable. The vertical isoperistaltic anastomosis

should be voided in every case. Although the loop may turn and will then give a good result, the difficulties and functional disturbances up to the time of the turning of the loop are not inconceivable. Furthermore, in some cases turning of the loop does not occur and, as a result, there is permanent kinking. NAEGLI (Z)

Finsterer H. Operations on the Stomach (Resectionen) in Advanced Age (Ueber Magenoperationen—Resektionen—in hohem Alter) *H. v. med. Wochenschr.* 93, 1901, 64

On the basis of his own extensive experience Finsterer opposes the opinion held by many that the mortality of operations on the stomach in advanced age is so high that in general it is better not to undertake them.

Carcinoma is the chief disease of the stomach in advanced age for which resection is apt to be indicated. Operations are rarely performed for benign ulcer. A callous lesion which is called ulcer operation is usually found on later microscopic examination to be cancerous, but there are exceptions to this rule. The author reports three cases of patients over 70 years of age in which the clinical diagnosis was carcinoma, but the histologic examination of the tissue removed at operation revealed a beginning carcinoma on the basis of an old ulcer in only one.

Cases of perforation of ulcer or carcinoma which are rapidly fatal without operation are rare in old age. Finsterer succeeded in saving the life of a woman of 70 years of age by operation performed fifteen hours after the perforation of a duodenal ulcer in spite of desperate condition. The pulse at first very irregular, frequent, and scarcely perceptible became clearly perceptible after an intravenous injection of adrenalin, a common salt.

Finsterer is unable to accept the view of many physicians and internists that the results of extensive operations on the stomach and intestines are worse in advanced age than in youth on account of the danger of pneumonia and heart weakness. In the operations on the stomach performed by Finsterer during the last ten years he has had almost as good results in old persons as in younger persons. Complications so much dreaded, are rare.

Carcinoma of the stomach. The prospect of permanent cure by operation are much more favorable in the cases of old persons than those of young persons since in advanced age the tumor is usually localized, does not spread, and very seldom forms metastases. Of 75 patients subjected to resection of the stomach and sixty subjected to gastrectomy for carcinoma, 33½ per cent were between 60 and 75 years of age. Of the patients 60 years of age who were subjected to resection twelve (1 per cent) died. The mortality of the 75 resections was only 7 per cent. Of the twenty-four fatal cases, three were cases of extensive resections of the stomach and colon, and in five resection of the

pancreas was also necessary. Therefore in all of these cases the prognosis depended less on the age of the patient than on the extent of the operation. In thirty-nine cases in which simple resection was done by Finsterer there were four deaths, a mortality of 10 per cent. One of the deaths was that of a woman with very severe anemia due to bleeding for fifteen months caused by carcinoma of the stomach. The other three deaths were due to pneumonia. In one of these cases 150 cm. of the wall was used for the anastomosis in addition to local anesthesia. In the two other resections was performed under local anesthesia alone in one of these patients with large calcifications was present, and in the other the pulmonary inflammation did not appear until the tenth day when the patient was up and about.

In general, Finsterer found that old very cachectic persons are often better withstand well the most severe complications of operation. Of the patients over 60 years of age on whom gastroenterostomy was performed three died following operation: two from peritonitis and one from pneumonia. Gastroenterostomy is only palliative operation but is definitely indicated when there is marked tenosis though many surgeons erroneously refuse to perform it on old persons.

Of 360 resections of the stomach for gastric and duodenal ulcer thirty-four were performed on patients between 60 and 75 years of age and of 100 gastrectomies with the same indications twelve were performed on patients between 60 and 80 years of age. In the latter twelve cases there was only one death that of a man aged 80 who was completely comatose twenty-four hours before the operation because of narcosis.

In the author's experience, carcinomatous degeneration is exceedingly rare in duodenal ulcer hence gastroenterostomy is often all that is necessary. In cases of gastric ulcer however resection should always be done without regard to age on account of the danger of carcinomatous change. In thirty-four resections for ulcer performed on patients between 60 and 75 years of age there were no deaths although among them were cases that had needed emaciation, severe pulmonary disease, etc. Deaths from peritonitis must be left out of the reckoning when judging of the dangers of the operation in advanced age because this danger is just as great in the cases of young persons. Finsterer's experience all cases of peritonitis caused by infection from without are fatal.

Finsterer attributes his good results especially to the absence of pulmonary and cardiac complications in the operation of carcinoma. Of fifty-five cases of resection for carcinoma forty-eight were performed under local anesthesia alone. Splanchnic anesthesia according to Braun's method is an important advance. 7 cm. of a 5 per cent solution of novocaine is injected at the fifth thoracic vertebra beneath the abdominal cavity to be opened. With the use of local anesthesia operation is possible in many cases with severe bronchitis and

emphysema which forbid the use of ether or chloroform in even the smallest quantities. Therefore neither the family physician nor the internist has any good reason to advise against operation or represent it as particularly dangerous on account of advanced age of the patient. **Boon (Z)**

Boyd, G. L. The Etiology of Acute Intestinal Intoxication in Infants. *Arch Int Med* 1923, xxxi 977

The author's summary is as follows:

Extracts of intestinal mucous membrane from cases of acute intestinal intoxication in children contain toxic substance which, when injected into animals produced definite syndrome consisting of depression and narcosis, anorexia, circulatory failure, an increase in the number of intestinal evacuations and in some cases convulsions and death.

Younger animals were much more susceptible to this toxic substance than older animals.

3 The toxin is not destroyed by boiling and passes through bacteri tight filter.

4 Crystals resembling those of the dipicrate of β -naphthol anisolethylamine were obtained by proper means, from the extracts of intestinal mucous membrane.

5 These crystals proved innocuous to animals until their basic character was restored by prolonged boiling in alcohol, when they became highly potent.

6 Previous dehydration of an animal rendered it more susceptible to the toxin.

7 Boiled aqueous extracts of fresh stools proved non toxic when injected into animals.

8 Systemic blood from cases of acute intestinal intoxication as slightly toxic when injected into animals.

9 Portal blood from patients was very toxic.

10 No distinctive pathologic findings were seen in any of the fatal cases.

WALTER H. NABER, M.D.

Gerlach W. Mechanical Injuries to the Mucosa Caused by Ascarides in Intestinal Obstruction Due to Ascarids (Ueber mechanische Schleimhautschädigungen durch Ascariden bei Ascarienderkrankung). *Deutsche Zeitschr f Chir* 1923, cxviii 396.

A girl, 9 years old, who was operated on for cut appendicitis (an area of beginning gangrene as large as pea) showed the signs of leuc and peritonitis four days after the operation. Laparotomy revealed diffuse peritonitis and marked distention of the small intestine which was partly bluish red. A number of ascarids lay in the small intestine immediately above the ileocecal valve. Beyond these the ileum was spastically closed. Numerous ascarids were found also throughout the course of the small intestine. About ten worms were removed from the site of the ileus by enterostomy. Death occurred a few hours later.

Autopsy revealed numerous worms in the small intestine. At the points where they were found

the mucosa was bright to dark red. In the upper part of the jejunum there were lesions of the mucosa extending into the submucosa. These consisted of longitudinal defects about 3 mm wide in the inner layers of the intestinal wall which resembled ploughed up furrows. The mucosa at the sides of these grooves showed no changes. On macroscopic examination, the blood vessels in the reddened areas of the mucosa and submucosa appeared markedly engorged. The mucosa was infiltrated by numerous cells, and the peripheral portions were partly necrotic and partly exfoliated. In the region of the defects the muscularis mucosae had been completely destroyed and a part of the submucosa showed ulcerative destruction.

Both the injury of the intestine and the spastic ileus were caused by the ascarids. It could not be determined whether there was any relationship between the ascariasis and the appendicitis.

GERLACH (Z)

Quain, L. P. Pathogenic Effects of the Right Colon. *J-Lancet* 1923, xlii, 73.

Most of the symptoms induced by coeleptos are due to the dragging on the mesentery or pericolic membranes and the constant fecal stasis. The symptoms are many and multiform, but may be assembled into three general groups: pain, constipation and intoxication.

The pain is of two types, that produced in the immediate vicinity of the colon and that produced by the dragging on other organs.

The success of treatment for all marked coeleptos will be proportionate to the patient's age and intelligence and his co-operation. The younger the patient subjected to coeleptos, the more certain and rapid the cure.

Medical treatment should be tried first. This necessitates two or more weeks in bed in a hospital. Several times a day with intervals of rest, and for an hour after each meal, the patient is placed in the Trendelenburg position on an incline of at least 30 degrees. So far as is possible he is not permitted to raise his shoulders from the bed at any time. An enema is given at least once a day. Meats and albuminous foods are as thick as possible. The diet is made up chiefly of vegetables, carbohydrates, and fruits to retard the putrefactive bacteria and to aid the fermentative flora in the caecum. Lactose is liberal amounts has also been found of definite value for this purpose.

On leaving the hospital the patient is instructed to lie in the Trendelenburg position for at least twenty minutes after each meal and upon retiring. An abdominal support should be worn and should be placed in position while in the Trendelenburg posture.

The medical regime generally gives only temporary relief surgery being necessary for a more lasting cure.

When the colonic wall has become infected and thickened and when pronounced lymphadenitis and

multiple adhesions are present, no operation short of right colectomy will give a cure.

In the presence of cecum mobility of mild degree fixation of the caecum coli to the root of the meso-appendix should always be done after appendectomy. It is Quain's conviction that this fixation of the cecum, accidental, accidental or intentional, has much more to do with the relief of symptoms after operation for so-called chronic appendicitis than removal of the appendix itself.

When the cecum and the ascending colon are both ptosed and hypermobile on a mesentery more radical fixation to the psoas muscle is done. An incision is made through the posterior peritoneum opposite the normal location for the cecum and the cecum is fixed to the muscle with two or three chromo catgut sutures.

When most of the ascending colon is free and hypermobile a second peritoneal incision is made somewhat higher, over the edge of the psoas, and two other chronic sutures are introduced. A very solid fixation is obtained by placing the sutures in the posterior longitudinal line of the colon, but this is apt to cause considerable backache in the first few weeks after the operation and may involve risk of too firm fixation in some cases.

When there is complete right coloptosis a still higher fixation is made at a point representing the hepatic flexure. It is not possible to effect the fixation to the back muscles because the kidney, with its blood vessels and the ureter is in the way. The posterior peritoneum is opened and two or three sutures are passed through the areolar tissue in front of the kidney. If there is only a small amount of fat present the muscles near the twelfth rib are easily reached at this point. If there is an abundance of fat it has seemed best not to pass these sutures deeply under the peritoneum but to be satisfied with a broad peritoneal attachment under the liver.

When the right kidney is definitely ptosed with the colon, the fatty capsule is split on the dorsum and peeled loose from the kidney. The tuft of fat thus freed externally but attached in front of the kidney pelvis is gathered together with two or three chromo catgut sutures and sutured firmly to the quadratus lumborum muscle. This forms a shelf upon which the kidney rests and is much better procedure than attempts to anchor the kidney itself.

The following is a brief summary of the results following colofixation. Twenty (6 per cent) of the thirty-six patients subjected to colofixation and coloptosis fixation are free from all previous symptoms, and twelve (75 per cent) of the sixteen with complete colofixation are entirely symptom-free. The majority of the rest (about one-third of the total number) gain constipation as the symptom.

which had not been entirely overcome by the operation. Four complained of occasional backache and three had colicky abdominal pains. More or less relief from previous symptoms as acknowledged by all but three. Not the least satisfactory were the

results in patients who were relieved of symptoms in other organs—kidney, gall bladder and duodenum—and upon whom the most radical and multiple interventions were performed.

The author summarizes his conclusions as follows: Coloptosis is a very common anatomical abnormality.

Comparatively few of those who are coloptotic suffer serious symptoms as a consequence but the incidence of the condition is much greater than was formerly supposed.

Some of the effects of coloptosis are attributed to other abdominal organs which may in turn give rise to a new set of symptoms obscuring the original chief condition.

Medical treatment affords relief in most cases and should be given thorough trial in all cases although the ability to cure is doubtful in any case.

Surgical treatment is as successful in this condition as in many other so-called surgical diseases, and promises better results as experience accumulates.

Chronic appendicitis is an infrequent condition. The term should be restricted to those comparatively few cases in which there is actually a chronic lesion of the appendix.

CARL R. STYCKE, M.D.

Wetherbee, O. O. The Indications for and the Results of Anchoring the Head of the Colon. *Californ. State J. Med.* 9:3, xvi, 69.

The author has often noticed that in certain cases of excruciating headache there is an associated lowering and distention of the head of the colon. He therefore endeavored to determine whether this deformity was responsible in part, at least, for the discomfort. Intoxication resulting from colon retention is both local and general. The local effect is exerted upon the nerve endings in the wall of the bowel and interferes with afferent and efferent impulses, thus establishing the vicious circle of lessened mobility, longer retention, greater intoxication, continued lessened mobility. Of the general effects the most glaring is the violent headache.

In twenty-eight cases the author separated adhesions and cut all fibrous bands to liberate the colon so that it could lie without restraint and in contact with the parietal peritoneum in the right flank. There he secured it with a running suture uniting the lateral longitudinal band to the fold of the peritoneum at a distance of 5 or 6 in. Taking care not to leave any channel between the new line of attachment and the mesocolon through which a hernia might develop. The results seem to be encouraging.

H. W. FINE, M.D.

Einhorn, M. Chronic Ulcerative Colitis and Its Treatment. *N. York M. J. & Med. Rec.* 9:3, cxv.

Strauss attributes chronic ulcerative colitis to dysentery but Yeomans regards it as an infective

condition because of the febrile course, the prostration, and the septic complications.

In reviewing the symptoms, Finhorn describes the characteristic stools, the constitutional reaction, the protracted chronicity, and the resultant disability.

The diagnosis is based upon a stool examination and the subjective symptoms caused by the local condition. If the symptoms are atypical, the proctoscope and the barium enema are valuable aids.

With regard to the treatment, Finhorn outlines diet containing very little cellulose. He advises abstinence from cold beverages, fruits, and salads, and the use of only small quantities of milk. Care must be taken to provide a diet of sufficient nutritive value.

In the medical treatment of the disorder it is important to use a medicine which will spread the remedy over long portions of the intestine. Finhorn recommends one to two teaspoonful of an astringent in agar such as tannin agar. *Ipecacuanha* agar is indicated if the attack follows amoebic dysentery and *lupulin* agar if there is colicky pain.

The local treatment consists of retention enemata. Irrigation of the colon through the rectum and irrigation through an appendicostomy or cecostomy opening. The thoracic operations mentioned by introducing an intestinal irrigation tube into the caecum through the mouth. This tube is left in place for one or three weeks during which time nutrition is also given by mouth.

A case in which this treatment as applied is reported. Six days after the introduction of the tube, the capsule was demonstrated in the caecum by the X-ray following inflation of the colon with oxygen. One hundred cubic centimeters of 1 per cent mercurochrome solution are then instilled and each calcium carbonate solution flushings are given by the dry method. This is continued until the evacuations are free from blood. When the tube is removed.

The procedure is recommended because of its effectiveness and because it renders surgical operation unnecessary. V. F. DIXON, M.D.

LIVER, GALL-BLADDER, PANCREAS, AND SPLEEN

Hass, W. The Bacterial Content of the Blood of the Portal Vein and the Origin of Liver Abscesses (Ueber die Bakteriengenhah des Pfortaderblutes und die Entstehung von Leberabscessen). *Deutsche Zeitschrift für Chirurgie* 9, 1910, 39.

Hass first gives a historical review of the various theories regarding the bacterial content of the blood of the portal vein and comes to the conclusion that permeability of the intestinal wall may be assumed in the presence of severe processes involving the mucosa. He then reports few very careful investigations on living subjects and a large number of animal experiments. From these he concludes that under normal conditions the blood of the portal vein does not contain bacteria, but that when the

mucous membrane of the gastro-intestinal tract is involved by inflammatory or destructive processes conditions are entirely different. Bacteria can be taken up by the radicals of the portal vein also during any gastric or intestinal operation in which the wall of the vena is divided throughout its entire extent. The organisms so taken up, however, are always destroyed by the bactericidal power of the blood.

Under certain conditions bacteria may penetrate into the liver not only through the branches of the portal vein, but also by way of the blood stream through the hepatic artery—as, for example, in puerperal fever, suppuration of bone, influenza, furuncles, and carbuncles—or more rarely by way of the lymph streams.

The biliary passages are the most important carriers of infection. Certain kinds of bacteria acquire luxuriant growth in the gall bladder and, especially when there is decrease in the contraction of the biliary passages or a biliary stasis, wander into the liver. They may enter the liver both at the adjacent portions of the stomach and intestine are so injured that their walls become permeable.

NOVEMBER, 1911

Rehman, M. E. Gall Bladder Disease. *South African Medical Journal* 15, 1911, 75.

With regard to the etiology of lesions of the gall bladder, the author points out that certain types of bacteria have a special predilection for the liver and biliary tract and at the same time certain percentage of these will involve the stomach and duodenum. This might explain the frequent association of the two types of lesions.

Attention is called to the specific elimination by the liver of the colon typhoid group through the bile passages, indicating that gall bladder infection may be the result rather than the cause of repeatedly infected bile. Many organisms occurring in the normal bowel have also been isolated from the infected gall bladder, but the fact that the *streptococcus mitis* and *streptococcus salivarius* of the mouth are found twice as frequently as the *streptococcus fecalis* suggests that diseases of the upper tract are more often the precursors of gall bladder disease than are lesions of the lower bowel. A common source of infected bile is discussed in detail.

Biliary lithiasis is often associated with hypercholesterolemia. A faulty liver cell may precipitate the cholesterol from stools. There is decided increase in the cholesterol in the blood during the early months of pregnancy and in the convalescent stages of typhoid fever and other diseases. Persons with errors in metabolism are apt to have stone formation.

Cases of gall stone colic are not difficult to diagnose. In the chronic type of case with few or no acute exacerbations, history of changes in the stool and flatulent dyspepsia, especially following the ingestion of fats, the presence of air in the stomach, heartburn, spastic constipation, dilation of the

circum with spasticity of the descending colon, and tenderness and distress in the gall bladder region are of diagnostic importance. Important indirect evidence includes fixation of the duodenum, deformities of the duodenal bulb, pressure defects, and fixation of the stomach at the lesser curvature. In many cases there is definite picture of pylorospasm. A Δ ray demonstration of calculus is possible in less than 50 per cent of the cases.

Regarding duodenal intubation the author is of the opinion that it is impossible to obtain pure sample of bile or to disinfect the upper digestive tract. On the other hand he believes that separate fractions representing the ducts, the liver and the gall bladder may be obtained although they are not pure secretions. He states that the evidence of disease in the bile is similar to the information obtained by urinalysis, gastric analysis, spinal fluid examination. In studying the bile he considers the following factors: (1) change in color and consistency, (2) an increase in the cell count, (3) the presence of abnormal elements such as cholesterol crystals, (4) the presence of crystals of amino acids, leucin and tyrosin, and (5) evidence of profuse epithelial exfoliation and clumping of leucocytes. The serum test for obstructive jaundice is significant.

Infection and stone are both due to conditions outside of the gall bladder. The resulting phenomena the surgeon may be able to relieve or remove completely. Whether operated upon or not the case is medical first last, and always. A careful search must be made for primary focus of infection as most gall bladder infections are secondary. The intake of cholesterol, fat, and protein in the diet must be regulated.

The intestinal tract must receive the same since toxic elements absorbed into the portal circulation cause liver changes. Transduodenal lavage combined with the Murphy drop relieves biliary stasis.

Cases requiring surgical intervention are those which there are recurrent acute attacks, spite of medical treatment, those with gross deformities in the right upper quadrant, those with common duct block, and those of persons of cancer who do not show improvement under medical care.

WILLIAM J. PIERCE, M.D.

Griffiths, H. E. The Relation of Diseases of the Gall Bladder to the Secretory Function of the Stomach and Pancreas. *Lancet* 93, col. 205.

It has long been known that there is a close relationship between gall bladder disease and digestive disturbances. The close proximity of the duodenum, the gall bladder, the head of the pancreas, and the pylorus makes it difficult in some cases to diagnose disease processes in these different viscera accurately. From an anatomical and physiological standpoint it is important to remember that from 50 to 90 per cent of normal persons a crescentic band or fold of peritoneum extends from the neck of the gall bladder downwards and to the first portion of the duodenum. The presence of such a band does not

indicate inflammatory disease of this viscus. The author reports one case in which contraction of the cystoduodenal fold due to cholecystitis lead to complete obstruction of the duodenum.

The vagus is the motor and secretory nerve to the gall bladder and bile passages, and the sympathetic from the ninth right intercostal segment is the sensory supply to the gall bladder. The vagus is the motor and secretory nerve to the stomach. The pancreas derives its nerve supply from both the sympathetic and the vagus. Inflammatory irritation of the mucous membrane lining of the gall bladder results in a reflex irritability of the gas acting chiefly on the stomach and leading to an increase in both the amount and the acidity of the gastric juice associated with relaxation of the pylorus and egestion of food in the duodenum. If the sensory stimulus is greater, pylorospasm is the result of sympathetic reflex through the ninth thoracic segment.

Infection of the pancreas is very frequently associated with gall bladder disease. In the greater number of cases infection occurs through the lymphatics. As a rule the internal secretion of the pancreas is not markedly altered although there may be an increased amount of diastase in the urine.

JOHN W. N. RUM, M.D.

Boße, H. A Case of Idiopathic Cyst of the Common Bile Duct (Ein Fall von idiopathischer Choledochocyst). *Deutsche med. Wochenschr.* 9, 1131 u. 38.

In rare cases an obstruction of the common bile duct results from no genital anomaly of the biliary passages. Usually there is valvular obstruction at the point where the common bile duct passes through the duodenal wall. The subsequently developing biliary stasis makes emptying impossible because the duct becomes changed to a large sac.

A case observed by the author was that of a girl, 3 years old, who had never been sick before. The onset of the condition was sudden with cramp-like pains. When the patient was admitted to the hospital her general condition was poor and she showed slight icterus. The right upper quadrant of the abdomen was somewhat distended. At first, slight improvement followed symptomatic treatment, but later there was relapse with colicky pains, vomiting and a rise in temperature to 38 degrees C. The stools were absolutely acholic.

The patient was then transferred to the surgical division, an echinococcus cyst of the liver being suspected. Operation revealed a tensely elastic tumor larger than a man's head which was partially adherent to the transverse colon and the duodenum and extended above to the under surface of the liver. It was impossible to find the gall bladder. The point of origin of the tumor could not be determined definitely because of the patient's poor general condition. The intestine was sutured to the abdominal wall and three liters of biliary fluid were withdrawn. The resulting improvement in the general condition was only transient. At the stools

remained continuously acholic. Second operation was performed. When the edge of the liver was raised the completely atrophic and fragile gall bladder was torn off. The biliary passages could not be found with certainty nor could the opening of the sac be discovered. Therefore an anastomosis of the lowest pole of the sac with the duodenum approximately 2 cm. wide was made. An excised piece of the sac all proved to be the wall of the biliary duct which had been changed by chronic inflammation. Four days after the operation the stools became colored for the first time. Four weeks later the patient was discharged cured.

This was undoubtedly a case of idiopathic cyst of the common bile duct which probably had its origin in a kinking of the common bile duct at its transition into the duodenum. A catarrhal inflammation was doubtless an additional factor in the obstruction, streptococci being found in the punctate of the sac. The diagnosis was made only at the time of the operation, as in the cases previously reported in the literature. Only surgical treatment comes up for consideration. The best procedure is the earliest possible choledochoduodenostomy. SCHEFFER (Z)

Burnham, M. P. The Importance of Indirect Roentgen Findings in Chronic Infection of the Biliary Ducts and Gall-Bladder. *Am J Roent* 1923, 9:3, 2, 25.

In the early days of roentgenology the roentgenologist depended for information relative to biliary tract infection chiefly upon the visualization of calculi in the gall-bladder. Subsequently George showed the possibility and importance of demonstrating the diseased gall-bladder itself and called attention to other manifestations of infection. During the past few years the author has found the so-called indirect manifestations of duct and gall bladder inflammation of increasing value in the diagnosis.

These indirect findings are divided into three groups: (1) changes of form and position in the first and second portions of the duodenum, and (2) variations in the normal gastric physiology.

Change of form and position in the first and second portions of the duodenum are due mainly to pressure but adhesion fixations as a cause cannot be excluded. These changes consist of clean cut indentations of the duodenal bulb, crescentic deformities, such as usually occur on the lateral or the inferior aspect of the bulb, irregular deformities of the bulb not of the crescentic type, and distortion in the course of the descending duodenum amounting in many cases to very marked angulation.

The changes noted in the normal gastric physiology are not nearly so decisive as those noted in the duodenum. They may be in the nature of spasm of the antrum with the secondary back flow of small or large amounts of the meal into the esophagus due to increased intragastric tension.

The technique employed is discussed briefly. Stress is laid upon the fluoroscopic examination in

the right oblique prone position at the angle which will best bring out the different parts of the duodenum. This angle varies in different persons.

In the differential diagnosis the presence of abnormal peritoneal bands has sometimes been confusing, but in general these structures have distinctive features quite different from those of lesions of the biliary system. Several cases of ulcer of the duodenum with old perforation resulting in fixation of the bulb and irregularity of contour not of the type usually due to ulcer have been seen, in which it was impossible to exclude a gall bladder lesion. Indirect findings have frequently demonstrated the presence of both ulcer and gall bladder disease.

ADOLPH HARTING, M.D.

Abell, I. Surgical Treatment of Diseases of the Gall-Bladder. *South V J* 1923, 17, 83.

Neoplasms of the gall bladder require surgical treatment, but are uncommon in onset and frequently not discovered in time for cure. Adenomas of the gall bladder are found today more often than formerly. These growths result from the irritation of infection or the pressure of stones.

The gall bladder is infected chiefly through the blood stream and the portal circulation. Infection by the latter route is evidenced by the widespread interlobular hepatitis found in many cases, and infection by the former route is proved by the fact that macro-organisms are often discovered in the walls of the gall bladder when the gall bladder contents are sterile.

In the author's opinion the gall bladder cannot be dispensed with as readily as the appendix as it has definite function though at present this is not thoroughly understood.

Cases of gall bladder infection may be divided clinically into three groups: (1) those with acute inflammation with or without cystic duct obstruction; (2) those with history of colic and reflex gastric disturbance; (3) cases in which there is no history of colic, but complaint is made of epigastric distress and digestive disturbances.

In the first group the indication for operation is obvious. The others must be cured for according to their particular requirements. Any gall bladder definitely diseased requires operation should be removed as in such case it serves as a focus of infection for the ducts, the pancreas, the myocardium, etc. The dilatation of the common duct following cholecystectomy insures adequate drainage of bile from the liver. In prolonged cases disease of the ducts pancreas and liver is a complication, and as this overshadows the disease of the gall-bladder surgical treatment of the latter must be subordinated to treatment of the more grave condition.

In cases of common duct stone and jaundice it is usually safe to remove the gall bladder and employ common duct drainage. When septic cholangitis and liver abscess are present drainage and care to avoid unnecessary trauma are important. Prolonged jaundice greatly increases the operative risk.

Alkaline water should be given previous to operation and transfusion resorted to as an added protection
WILLIAM J. PICKETT, M.D.

Friedleben, M. An Unusual Case of Spontaneous Rupture of the Spleen Corred by Splenectomy. (Ein durch Splenektomie gebühler seltsamer Fall von Spontanruptur der Milz.) *Deutsche Zeitschr. f. Chir.* 9, citra, 45.

The patient, a man 27 years old who was at the front during the entire time of the World War, suffered slight attack of typhus, and subsequently had febrile entitis of six weeks duration. Previously he had never been sick. Most important of all, he had never complained of pain in the bones. From March 10 to 14, 1919, he had slight inflammation of the throat but fully recovered. The rupture of the spleen occurred several days later while he was sitting in his office and was the cause of severe and prolonged hemorrhage. Splenectomy was followed by complete recovery.

At operation the liver was found of normal size. An intravenous infusion of camphor and sodium chloride solution after the operation had a striking effect. A pathologic anatomical diagnosis of leukemic spleen was made because of the changes in the tissues. The blood in the spleen showed marked increase in the lymphocytes. The thrombosis in the acute infection or an early hyperplastic process in the tissue controlling the blood. The course of the disease and the subsequent condition of the patient who was entirely well and one-half years later the operation failed against chronic leukemia. The author believes the condition was general infection with leukemia blood picture and corresponding reaction of the hematopoietic system. With the exception of the spleen, the lymphatic tissues of the body were not involved. In December, 1920, one and one-half years after the rupture, the patient was subjected to an appendectomy. The blood picture at that time was normal.
(COLLIER, Z.)

von Stubenrauch. Surgery of the Spleen. Ligation of the Splenic Artery. (Zur Milzchirurgie. Die Ligatur der Arteria lienalis.) *Deutsche Zeitschr. f. Chir.* 921, citra, 374.

In the case of a 66-year-old man, who with gout had hemorrhages from the skin, the kidneys, and the intestine in November, 1920, the main branch of the splenic artery was ligated 8 cm. from the spleen after the second arrest of the hemorrhage. January 6, 1921. The course of healing was somewhat disturbed by singultus lasting for eight days and by slight suppuration of the abdominal wall.

Previous to the operation the blood picture was as follows: hemoglobin 3 per cent, erythrocytes, 1,200,000, leucocytes, 9,000, coagulation time 15 minutes, no myelocytes, and few ucleated erythrocytes. Nearly all of the normoblasts are stippled and the blood platelets were unusually few. Ten to fifteen hours after the operation the number of blood

platelets was about normal, and giant blood platelets, a larger number of isolated myelocytes, and isolated stippled erythrocytes were present. Seventeen days later the blood showed marked poikilocytosis, not red, pale blood discs, mononuclear leucocytes, and large number of blood platelets.

Since August 22, the patient has now followed his calling as office clerk, has had no more hemorrhages and has been free of symptoms. In July, 1921, marked poikilocytosis, only a few blood platelets and isolated Jolly bodies were found. On August 9, 1921, more than eight months after the operation the hemoglobin amounted to 90 per cent, the eosinophils to 4.4, the color index to 0.86, the erythrocytes 5,200,000 and the leucocytes to 955. There were no abnormally altered erythrocytes, few blood platelets, and no Jolly bodies. The blood coagulated in 10 minutes and 55 seconds.

On the basis of the case observed, and the others reported, the literature, Stabenrauch recommends the ligation of the splenic artery in place of extirpation of the spleen in certain forms of blood diseases. Necrosis of the spleen can be definitely avoided if the ligation is made distant enough from the hilus of the spleen.
(COLLIER, Z.)

Foot, N. C. Studies on Endothelial Reactions. Changes in the Distribution of Colloidal Carbon Noted in the Lungs of Rabbits Following Splenectomy. *J. Exp. Med.* 93, citra, 39.

After splenectomy in rabbits, colloidal carbon introduced into the circulation is removed primarily by the lungs, which compensate for the loss of the spleen and contains thirty more carbon than that of normal rabbit.

The liver, bone marrow and peripheral lymph nodes show no marked alteration in their phagocytic activity as compared with those of controls. They do not compensate for the loss of the spleen.

The cells phagocytosing colloidal carbon in the lung appear to be produced there, rather than in other organs, as under these conditions proliferation of the endothelium occurs chiefly in the lung.

These cells remain in the pulmonary capillaries and lymphatics or are thrown into the circulation. In the latter case there is apparent increase in the number of macrophages in the lumina of the blood sinusoids, but nowhere else, indicating transference of carbon from the lung to the liver within cells.

It appears probable that these cells are destroyed in the liver and their content of carbon is taken up by the parenchyma, since the latter frequently contains carbon particles and shows mitotic activity.
SAMUEL KARN, M.D.

MISCELLANEOUS

Silbeck, W. M. Penetrating Wounds of the Abdomen. *Am. J. Surg.* 93, citra, 3.

This discussion is confined to abdominal penetrations seen in civilian practice and due to knife

or bullet. Practically all such wounds are made to close range.

Two types of cases are considered: one in which the abdomen is penetrated directly through the parietes (in these the diagnosis is apparent) and the other in which the penetration is indirect, the condition being only surmised from indefinite abdominal signs until laparotomy is performed.

Significant signs usually present are: hematemesis, suggesting stomach or duodenal injury; melena, indicating an intestinal lesion; bloody urine indicating causal or genito-urinary tract involvement; the escape of characteristic fluids from the wound and the protrusion of omentum or intestines.

Shock and hemorrhage are practically always present. Persistence of the former usually indicates the latter, which is suggested also by pallor, thirst, a thready pulse, and clammy skin, and some times by shifting areas of dullness in the flanks.

The author classifies these cases into five groups. Perforating wounds without intra-abdominal injury. Wounds of this type are rare. Uneventful recovery follows.

Hemorrhage in the absence of visceral lesions. This is practically always present and is directly dependent upon the severity of the laceration and the parts involved.

3. Perforations of hollow viscera. In general the intensity of the symptoms and the clearness of the physical findings are almost in direct ratio to (1) the duration of the condition, (2) the amount and virulence of the liberated intestinal contents, and (3) the amount of bleeding in the abdominal cavity. Persons with such injuries early show signs of shock, abdominal tenderness, and rectus spasm; later these signs are gradually overshadowed by the increasing manifestations of peritoneal irritation.

4. Injuries to the solid organs. Such injuries are complicated by lacerations elsewhere and every unusual mortality depends upon the possibility of controlling the hemorrhage, which is generally profuse.

5. Massive hemorrhage. Persons with massive hemorrhage are practically moribund when they enter the hospital and most of them die within few hours.

A gunshot or stab wound of the abdominal wall is a sufficient indication for immediate exploratory laparotomy. The incision should be large and so placed that it most effectively brings into view all the supposedly involved viscera.

Solid organs are packed or, when possible (spleen, kidney, ovary, uterus) are removed if the hemorrhage cannot be controlled. Visceral tear through and tend to aggr. is the condition.

Perforations of hollow viscera are closed with absorbable sutures. Resection is indicated for (1) multiple wounds within space of 8 in. (2) large tangential wounds. (3) injury of the mesenteric border. (4) gross injury to the blood supply

and (5) cases in which closure would cause definite obstruction.

A peritoneal cavity free from blood and intestinal contents can be left without drain but continued oozing and the obvious presence of intestinal material necessitate very free drainage.

An immunizing dose of tetanus antitoxin is given when the patient enters the hospital. He is then placed in a warm bed. Morphine is withheld until a diagnosis is made. After operation, morphine with atropine is administered generously and retention enemata of glucose and luke are given. Paralytic ileus should be recognized early and vigorously combated. The diet should be increased as rapidly as possible and the patient gotten out of bed as soon as he is physically able.

The prognosis depends upon the structures involved, the amount of material which has escaped from the hollow viscera, the amount of hemorrhage, and the time which has elapsed since the injury.

C. CONNOR Y. VINT, M.D.

Rosenhoff, J. L. The Diagnosis of Obscure Chronic Abdominal Conditions. *Am. J. M. Sc.* 1935, cliv, 30.

The exploratory laparotomy is falling into the disfavor, also gastro-enterostomy done in the absence of demonstrable lesion in the stomach. In the latter case, the true cause of trouble, the gall bladder or appendix, is often left and continues to cause symptoms suggesting ulcer. Moynihan has designated this condition appendix dyspepsia. There are no definite attacks of pain and the pain is less severe than ulcer pain. Instead of food relief there is increased distress after food and after exercise. Vomiting is frequent. Flatulence and heartburn are the most distressing symptoms. In few cases there is vomiting of blood due probably to gastric toxic ulcers or erosions in the stomach. Superficial rigidity of the right rectus muscle, without localized pain, or epigastric pain produced by deep pressure over McBurney point is an important sign.

Reflex symptoms from the appendix or gall bladder may cause pyloric spasm leading to gastric stasis and by pericarditis, tonsillitis, nasal stasis, irregularities in micturition or cardiac disturbances. Reflex epigastric pain is common. Removal of grossly normal appendix often clears up the symptoms.

Mechanical interference such as that caused by adhesions around the gall bladder may embarrass gastric movements. Pericardial adhesions may cause intestinal torsion. The correct diagnosis may be established only by the occurrence of definite appendicular symptoms. A single series of X-ray examinations is often misleading. Frequently the appendix is diseased first, this condition being followed by associated disease of the stomach and gall bladder. The X-ray is of doubtful value except to rule out an actual gastric lesion.

Cholecystitis may be present without pain. In some cases complaint has been made only of back ache between the shoulders.

Epigastric hernia may produce similar symptoms but is very rare. It may cause vomiting or acute pain but rarely chronic involution.

Of 150 patients given a routine Wassermann test twenty-four had a positive reaction and of the latter six had undergone abdominal operations without benefit. The condition is often congenital.

CAROL E. JAMESON, M.D.

Laeven, A. Segmental Localization of Pain Through Paravertebral Novocaine Injections as a Differential Diagnostic Method in Intra Abdominal Diseases (Über segmentäre Schmerzen aufsteigend durch paravertebrale Novocaininjektionen zur Differentialdiagnose intraabdominaler Erkrankungen). *Vorlesungen med. II. Kurzer* 9, 1924, 143.

In thirty cases of abdominal pain Laeven gave paravertebral injections of novocaine in order to determine the segmental localization of the pain. In gall stone colic the injection of 10 cm. of 1 per cent solution over the tenth dorsal nerve abolished the pain. The procedure proved valuable in both the diagnosis and the treatment.

It is found that in gastric cases an injection over the seventh dorsal nerve greatly alleviated the pain of pyloric ulcer. Renal colic was influenced by injection over the first and second lumbar nerves. Appendix pains were influenced by injection of the first and second lumbar, but not with certainty and not completely. The muscle spasm disappeared with the pain.

LARSEN (Z).

Santa L. R. Pneumoperitoneum as an Aid in the Diagnosis of Subdiaphragmatic Conditions. *J. Am. Med. Ass.* 9, 3, 1924, 464.

Since pneumoperitoneum was first used as an aid in roentgen ray diagnosis, much has been done to simplify the technique and a great deal of investigation has been carried out to determine the full possibilities of the method. While its application to the diagnosis of subdiaphragmatic conditions is not as wide as for that of conditions in other regions of the abdomen, a subdiaphragmatic lesion being limited, the information it gives is often decisive.

Santa reports the case of a young man who was admitted to the hospital with chills, high temperature, and pain in the back. A perinephritic abscess which was found on physical examination was incised and drained. The temperature then fell to normal. Drainage continued to decrease and at the end of the seventh day had practically ceased. On the seventh day the temperature again rose suddenly and there were chills and profuse perspiration. Both physical and roentgenographic examinations revealed moderate collection of pleural fluid and mobilization of the diaphragm on the affected side. All of the symptoms suggested involvement of the subdiaphragmatic space. Examination by pneumoperitoneum, however, proved that the subdiaphragmatic space was not involved and simple thoracotomy resulted in cure. The information

given by pneumoperitoneum therefore guided the surgeon his choice of operative procedure and led him to perform a much less formidable operation than at first seemed indicated.

Pneumoperitoneum may be of decuss and also in cases of cricopharynx of the lower end of the esophagus, adhesions of the viscera to the diaphragm and hernia of hollow viscera through the diaphragm.

GEORGE E. BEILBY, M.D.

Cancet, A. Retroperitoneal Cysts (Delle cisti retroperitoneali). *Arch. ital. di chir.* 9, 17, 48.

Retroperitoneal cysts develop in the retroperitoneal space or connective tissue of the abdominal cavity. Cysts of partially or completely retroperitoneal organs such as the kidney, suprarenal capsule, and pancreas are excluded. Scaville or pedunculated cysts may be propagated into the retroperitoneal space from the organs mentioned and others but the majority occur in the connective tissue in small structures in the connective tissue such as the blood vessels, lymphatics, an aberrant portion of the suprarenal capsule or pancreas, or an undivided duct.

Cysts classify as follows:

- Epithelial cysts () ectodermic origin (dermoid) () mesodermic origin (Wolffian body)
- (1) endodermic origin (enterocysts) (4) embryonal (teratomas)
- Lymphatic cysts () simple (serous and chylous) () lymphangiomatous
- (3) pseudocysts () hematoma () serous (3) urinary (4) pancreatic (5) inflammatory (6) parasitic cysts

Echinococcus retroperitoneal cysts are rare and of less importance than congenital cysts. They may be propagated from the pancreas, kidneys, muscles, vertebral column, etc.

The author reports the case of a man 63 years of age who had had enlargement of the abdomen for a long time. There was distinct tensely fluctuant swelling in the left epigastrium and flank. Bowel inflation, stomach analysis, and X-ray and urine examinations led to diagnosis of retroperitoneal cyst. At operation the cyst was found lying above and behind the spleen, flexor of the colon and forcing the small bowel into the right side of the abdomen. Five liters of turbid fluid containing flocculent material were withdrawn from the cyst. The thick cyst wall was freed from the colon, diaphragm, parietal wall, and kidney. The suprarenal capsule was not seen. The portion of the cyst wall overlying the aorta was left intact and the entire cavity manipulated to the abdominal opening. The cavity healed in eight months.

HALLGREN SPEDIN, M.D.

Collins, A. W. Migratory Tumors of the Abdomen. *N. York J. of Med. Res.* 9, 3, 1924, 65.

References in the standard textbooks and current literature to benign tumors of the

abdomen are few. The earliest case found in the literature was reported in 1860. With one exception, all cases reported were those of women. Campbell and Ower described a tumor removed from a man 69 years of age. This growth had been noticed for twenty five years and at operation was found to be free from any attachments. Its surface had the glistening appearance of fibroid, and on cut section the center was found to be calcareous and the surrounding tissue contained no nuclei, cells, or nuclei.

The vast majority of the other tumors reported were found in women not operated upon previously. The growths were fibroids or ovarian cysts which had become detached and remained free in the abdominal cavity or had formed new attachments.

In one case reported a fibromyoma of the abdominal wall, evidently due to reimplantation at the time of operation, was found ten years after a hysterectomy for fibromyoma. Two cases of this type of tumor are reported by the author. In the first the tumor was attached to the colon and necessitated resection of a portion of the colon. The macroscopic examination showed it to be a leiomyoma similar in structure to tumor of the uterus removed four years previously. In the second case five encapsulated tumors were removed from the anterior abdominal wall. Microscopic examination showed them to be cystadenomas. A previous operation had been done on this patient for the removal of papillary cystadenoma of the right ovary.

(E. E. BARNES, M.D.)

SURGERY OF THE EXTREMITIES

CONDITIONS OF THE BONES, JOINTS, MUSCLES, TENDONS ETC

Parke, E. A. Certain Factors Causing the Deposition of Lime Salts in Bone. *Dental Cosmos* 9:3 In 196

Marked and typical rachitic lesions have been produced in rats by the use of diets high in calcium and low in phosphorus. Photomicrographs of bone recovered from rats given treatment after the production of rachitis show almost complete recovery.

The treatment employed in the experiments was the well-established use of cod liver oil and sunlight. It was found that starvation also increased the amount of lime salts deposited in rachitic bones.

Fact explained by the assumption that the starving animal draws upon its body tissues for food, thus consuming its carbohydrate, protein, and fat and liberating the amount of phosphorus necessary for normal bone anabolism.

Röntgenograms of two of a set of quadruplet children demonstrated clearly the value of cod liver oil and actinotherapy (the ultraviolet quartz lamp). One of these children at the age of fourteen months was given cod liver oil for six weeks before the X-ray pictures were taken, while the other was given none. As a result a striking difference was noted in the bones of the forearms of the two children, the child given cod liver oil having fairly dense bones while its twin showed marked typical rachitis. Röntgenograms of the forearm of another baby (aged six months) showed a definite increase in the deposition of lime salts four weeks after treatment with the quartz lamp.

Emphasis is laid upon the advisability of injecting considerable amount of green food and milk in the diet of the pregnant woman and of the importance of giving babies cod liver oil and exposing them to direct sunlight and fresh air. Mention is made of the fact that ordinary window glass filters out the radiation of the sunlight which prevents and cures rachitis.

Dwight W. Carr, M.D.

Bloodgood, J. C. Bone Tumors: Sarcoma, Periosteal Group, Sclerosing Type, Osteogenic Methods of Diagnosis and Treatment. *J. Radiol.* 1933 IV 46

In cases of bone tumor amputation should be done without delay if permanent cure may be expected from it.

On the basis of the X-ray picture the author divides bone lesions into two main classes: (1) the central, and (2) the periosteal.

When the evidence is strongly in favor of malignant process no exploration is necessary if the decision is made to treat the case with radium and the X-ray. If amputation or resection is contemplated, expectant treatment diminishes the possibilities of cure.

The number of cures of periosteal sarcoma after amputation is relatively small.

The author cites cases of sarcoma involving the upper and lower end of the tibia, giving the detailed clinical history, X-ray interpretation, and treatment.

He emphasizes the importance of investigating localized pain in the region of joint or bone by means of the X-ray. This should include not only the area of pain, but also the corresponding bone or joint. A case of sclerosing osteogenic sarcoma is reported in detail.

The author recommends the examination of specimens removed at exploration by means of Terry's polychrome methylene blue, and urges the perfection of frozen section study of specimens.

MATTHEW BARDENHEIMER, M.D.

Kaufmann, C. Sprains of the Large Joints of the Extremities (Die Verstaechung der grossen Extremitätengeleite). *Schmerz und Nerven* 1923, Nr. 37-774

First. Sprain of the wrist is the most common sprain of the upper extremity and the second most common of all sprains. The author agrees with Bardenheimer that the chief injury is sustained in the joint capsule. This is stretched much more often

then it is torn. In discussing the symptoms the author emphasizes particularly the facts that pressure is only slightly painful or not painful at all, and that closure of the fist is little disturbed when the hand and forearm are placed upon the table. An effusion into the joint is almost always present, but as this occurs also in fractures, fracture must be excluded by roentgen examination. I rupture or separation of the epiphysis, which is much less common, as an effusion is not present, the swelling is less, and the pain is rapidly relieved by rest but increased by massage. The possibility of the presence of previous changes in the wrist must be born in mind, particularly a fracture of the radius (Madelung deformity) and chronic tuberculosis. The roentgenogram will give information regarding both of these conditions. Acute inflammations more rarely cause diagnostic difficulties.

The prognosis is good when proper treatment is given. Ankylosis seldom occurs. The development of tuberculosis does not result from a sprain, but a sprain frequently lights up a previously latent tuberculosis. The treatment consists of massage and the application of a warm, moist dressing until the effusion and the swelling disappear. In cases of old distortions the massage should be begun slowly. Work should be resumed as soon as possible, but delicate work should be prohibited for longer time. In the author's opinion the application of plaster cast is not justified and the effect of the cast band is often over-estimated.

Elbow. Sprains of the elbow are rare. In this condition also stretching of the joint capsule without complete tearing is the chief injury. The author has never seen ruptures of the joint ligaments and muscles in case of simple strain. Frequent deformities due to fractures in childhood were present before the accident causing the sprain. Previously present arthritis deformans and tuberculosis may give rise to diagnostic errors. Occasionally arthritis deformans is found in strong laborers of middle age without symptoms.

The prognosis is favorable. Healing requires about three weeks. The treatment consists of rest in bed for several days with the arm on pillow or in extension, followed by massage. Ambulatory treatment with triangular arm sling is not desirable.

Radial humeral and radio ulnar joints. Sprains of the radial humeral and radio ulnar joints are rare. Usually there is severe pain immediately after the accident, and pronation and supination are painful. The treatment consists in the application of compresses followed later by massage. In the author's opinion the recently described epicondylitis is the result of repeated sprains of these joints, and not rarely an occupational injury.

Shoulder. Sprains of the shoulder joint constitute from one-eighth to one-fifth of the sprains of the upper extremity. The causes are practically the same as those of luxations. Not rarely changes in the joint caused by acute articular rheumatism and

partial ankyloses due to previous injuries or chronic deforming processes were present before the sprain. In all new cases examination should be made for atrophy of the deltoid muscle, changes in the other shoulder joint, crepitation, and partial ankyloses. Tuberculosis may be fairly latent for a long time and suddenly become acute as the result of a sprain.

With the proper treatment, the prognosis is favorable. Treatment with the triangular arm sling as generally practiced and liniments are decidedly contraindicated. Every patient with a sprain of the shoulder should be kept in bed until active elevation and abduction of the arm to the fullest extent are possible. The upper arm should be raised to the level of the shoulder and placed on pillows in abduction. Massage should be begun on the third day. In cases of old ankyloses and those which have been massaged for a long time, treatment by extension bed may be successful.

Foot. Sprains of the foot are the most common of all sprains. In the majority of cases the individual ligaments are stretched, complete ruptures are rare. The severe pains are caused by the friction of blood into the tense ligaments. In general, bone avulsions are unusual in sprains, but a fracture of the external malleolus should be sought for.

In fresh distensions the best treatment is immediate massage. This generally relieves the pain at once by distributing the effused blood. After the massage compression bandage should be applied, and over this moist compresses. Bed rest is necessary. The patient may be allowed to leave his bed only when pain is no longer present in the morning. He may return to work in three to five weeks. Cases of few days' old and showing marked swelling generally require bed rest with elevation for 5 to 7 days. They should then be treated in the same way as fresh cases.

Knee. Sprains of the knee joint constitute about 6 per cent of all sprains and 8 per cent of the sprains of the lower extremities. Here again complete laceration or rupture of the ligaments occurs only in the most severe sprains, usually the injury is stretching and partial tear. The injury of the meniscus constitutes an injury in itself and as a rule is not associated with severe sprain. The cause of the sprain is any exaggeration of motion occurring normally in the knee. Any of the ligaments may be affected.

These injuries to the ligaments are frequently visible in the roentgenogram. Injuries of the lateral ligaments can be palpated directly. The diagnosis can be made if fractures can be excluded by the roentgenogram and injuries of the meniscus excluded by the history. Early aspiration is valuable in the diagnosis. An effusion of blood indicates fresh injury, the admixture of fat droplets fracture and clear or predominantly serous effusion in the first few hours. In addition to other signs such as thickening of the joint capsule, atrophy of the quadriceps muscle etc. previous disease. The history is of little aid as chronic

inflammation of the knee joint often has little effect on the functional capacity.

The prognosis depends first on the proper treatment. In cases of slight genu valgum the course is usually not disturbed but when there is marked genu valgum it is started. Not rarely a deforming arthritis results after the sprain, but if the joint was previously healthy this heals after a time. Marked aggravation of a previously present arthritis deformans as result of sprain is rare. Ambulatory treatment of fresh sprains of the knee should be discontinued. The patient should be kept in bed until movement has become approximately normal. The effusion should be aspirated on the inner side of the knee with a cannula 3 mm. thick. This joint should be completely emptied. After the aspiration warm moist compresses should be applied. If necessary the aspiration may be repeated. After the cessation of the first pains, careful exercises and massage should be begun, particular attention being paid to the quadriceps muscle. If the patient is not allowed to get up until the return of approximately normal function he should walk energetically and with a fully extended knee about the end of crutches.

As a rule a complete cure results in three to six weeks if this is not the case serious lacerations of the ligaments or an arthritis deformans will usually be found. In such cases of this kind, motion should not be begun before four weeks, and extensive motions must be avoided. Limitation of motion persisting longer than one year after severe distortions is usually permanent. In chronic hydrops, aspiration should be done with careful search made for tuberculosis. This should be followed by a few days of rest with the application of compresses and treatment with energetic massage and movement only in very rare cases as the thorax compelled resort to irrigation with carbolic solution. In arthritis deformans, massage is desirable as long as the extension of the motions improves. This condition often heals after time if the patient is not too old.

Hip. Distortions of the hip joint are rare. The thorax has not as yet seen definite case. In young persons there is usually tearing of the epiphysis of the head or its complete separation. In older persons there is arthritis deformans. The treatment consists of rest in bed for three weeks with the leg in extension. Drees (2)

Veilmann, J. So Called Crepitation of the Scapula (Ueber das sogenannte Scapularcrackchen). *Allg. W. chnisch.* 9 255

In the vast majority of cases of crepitation of the scapula the condition is due to overhanging of the tumefied shoulder blade or small exostoses at its upper angle. Induration in the muscles (Jastram) and the appearance of pseudo-bony masses (Knetter) are usually secondary. When the anomalies are slight, as is frequently the case, the development of crepitation is dependent upon the simultaneous presence of other changes such as

those resulting from trauma, scoliosis, or tuberculosis (shrinking processes in the pleura and lungs).

In severe cases the treatment should consist in the chiselling or clipping off of any bony prominences through longitudinal incision at the inner border of the shoulder blade or through a curved incision at the inner upper angle. Muscle plastic (Lothman, M. clature) may be followed by recurrences. In the cases of patients who dread operation, treatment by bandages may be considered.

Four cases are reported. In the one which was treated successfully by operation the bony elevations were found at the inner upper edge of the shoulder blade close to its angle. The largest which was the size of a pea, produced noise by gliding over the second and third ribs. In the three other cases, in which operation was refused the condition persisted. Strömmer (2)

Kappas, M. Snapping Shoulder and Voluntary Dislocation of the Shoulder (Schnappende Schulter und willkürliche Schulterverrenkung). *Arch. f. Orthop. Unfall-Chir.* 9 22, 335

In the author's opinion most voluntary dislocations of the shoulder are cases of so called snapping shoulder in which there is no dislocation, but the head of the shoulder is drawn with snapping sound forward or backward under a stretched muscle bundle of the deltoid. This displacement is produced by isolated contraction of the muscles of the upper arm and shoulder blade or of the upper arm and breast.

Kappas collected thirteen cases. The shoulder snapped backward in ten and forward in three. One boy was able to snap his shoulder either forward or backward. In no case was any disease of the shoulder joint found. In many instances laxness of the capsule is assumed, but in the author's opinion this is not necessary for the abnormal movements as the capsule and peri-articular soft parts normally allow sufficient room for play.

As a rule treatment is unnecessary as this condition usually occurs in young persons in whom it disappears spontaneously in the course of years. True voluntary dislocations undoubtedly occur but they are rare and indicate the presence of marked change in the joint. In conclusion the author states that sort of snapping may be produced by condition in which the normal movements of the joint are inhibited by an intra-articular or extra-articular cause (catching of the greater tuberosity in a cleft between the short head of the biceps and the coraco brachialis muscle). Bueck (2)

Setta, F. Operative Treatment of Suprascapular Fracture of the Humerus in Children (Sul trattamento operativo delle fratture suprascapolari dell'omero nell'età infantile). *Chir. d'oggi e tomorrow* 9 16, 639

The author accepts Kocher's flexion and extension classification of suprascapular fractures of the humerus. He found only one flexion fracture in twenty

two cases of children under 12 years of age. These elbow fractures caused by extension are equivalent to posterior elbow dislocations in the adult. Anatomical reposition is followed by functional recovery.

The classical method of closed reduction is usually successful, but the fact that the forearm can be brought to a right or an acute angle does not necessarily indicate that reduction has been obtained. A controlling skiagram is required. A moulded splint is preferable to a circular cast as the latter endangers circulation. The period of immobilization should be reduced to from eight to fourteen days, an average of ten days, and should be followed by active and passive motions until full cure has resulted.

Opponents of this treatment fear new bone formation in the extravasated blood or myositis ossificans. Ambulatory splints and skeletal traction are not well borne by children.

Cubitus aris resulted in 25 per cent of the author's cases, and in more than 5 per cent late operation was done. In many cases the posterior and medial displacement of the distal fragment cannot be corrected even under anesthesia, open operation being therefore necessary.

Six cases are reported. In some of them method of fixation as used. KELLGREN, SVEN D, M D

Clacon, S. A Contribution to the Study of Rigidity of the Hand (Contributo allo studio della rigidità della mano). *Chir d'org e d'ext. mem.* 92 666

The author enumerates the various traumatic and inflammatory lesions of the hand resulting in rigidity. The success of treatment to overcome the rigidity depends on the cooperation of the patient. Hand rigidity is caused essentially by limitation of joint movement resulting from alterations in the articular cartilages and the capsular and other ligaments. Such rigidity differs from stiffness due to extra-articular causes in the muscles, tendons, and nerves.

Lesions which cause finger rigidity are direct injuries, such as contusions, sprains, dislocations, and intra-articular fractures, and indirect injuries due to wounds of the soft parts of the hand and forearm, lesions of nearby joint and nerve trunks, prolonged inactivity, and severe and long-standing infections, especially those of phlegmonous character.

The author reports four groups of cases due to (1) traumatic injuries with or without infection, (2) phlegmonous infections, (3) fracture of the forearm, and (4) unreduced fracture or osteoarthral contracture. KELLGREN, SVEN D, M D

Cassanelli, M. Coxa Plana and Tuberculous Osteitis of the Neck of the Femur (Coxa plana ed osteite tubercolare del collo femorale). *Chir d'org e d'ext. mem.* 9 1,685

The author reports a case of localized tuberculous osteitis of the neck of the femur in a 5-year-old child.

The progress of the disease is shown by five skiagrams taken over a two-year period. Although the leg was immobilized, flexion and restricted abduction were obtained. There was shortening of 1 cm. The skiagrams, however, show coxa plana instead of shortening of the neck and lessened neck angle. In 1909 Waldenström reported similar cases in which the healing of localized tuberculous osteitis of the femoral neck appeared as coxa plana.

KELLGREN, SVEN D, M D

Hass, Angiomas of the Capsule of the Knee Joint (Ueber Gefäßneurotome des Kniegelenkapsel). *Deutsche Zeitschr f Chir* 9 2, 218 u. 30.

The author had occasion to operate on two cases of hemangioma of the capsule of the knee joint in which the history and findings were in marked variance with each other and for this reason allow far-reaching conclusions regarding the prognosis and treatment of the condition.

The first case was that of a 30-year-old man who, since his fifth year, suffered with pain in the flexion of the knee joint, which under the diagnosis of tuberculous, was treated for years by the application of plaster cast. The patient came under the author's care in his thirty-third year. There was then an effusion in the joint and the knee could not be extended completely. Crepitation in the joint was noted but no palpable tumor. The roentgenogram was negative. There were extensive varices on the leg and in the popliteal space.

Operation revealed large varices in the fascia and the fibrous capsule. The joint was filled with angiomatic masses which covered the synovial cavity here. The cartilage and bones were intact. After the removal of these masses, healing with complete function resulted.

After 1 1/2 years the same symptoms recurred. At the age of 30 years the patient again requested treatment. Examination revealed moderate effusion in the knee, ankylosis, and muscular atrophy of the leg. The roentgenogram disclosed bone changes.

Operation showed the spread of the recurrence to the joint ends. The joint was again filled with angiomatic masses, the patella was completely denuded of cartilage, and the tumor had ruptured into the bone and the condyles of the femur. After a careful excision of the angioma, during which cavity was found in the tibia, and after removal of the capsule of the joint with all the recesses the bony portion of the joint was resected. Good consolidation and cure resulted. The histologic report was capillary and precapillary angioma of the synovial membrane.

The second case was that of a 2-year-old girl, born since the time of her birth, had had several small tumors below the left knee which gradually grew to the size of bean. One of these was excised 6 years previously, but recurrence which caused marked lameness on walking developed immediately. At the time of the examination by the author a moderately movable, very sensitive tumor

the size of a walnut as felt under the center above the patella on deep palpation, and below it in an area as large as the palm of the hand, a number of small bluish movable tumors. Motion of the joint was very painful. On roentgenoscopic examination nothing pathologic was found.

After the extirpation of the small tumors, the larger tumor was exposed. This fibrous growth, infiltrating the capsule, had proliferated through the fibrous capsule of the joint and invaded the synovial membrane in part. A portion of the joint capsule measuring 8 by 4 cm was resected. The rest of the joint was normal.

Healing occurred. There was no recurrence for nine months. The pathologist reported: system of thin walled, communicating, blood filled cavities enclosed by firm connective tissue and penetrated by thick walled blood vessels. Cavernous angioma.

In both cases the notable feature was the severity of the symptom. In the first case the tumor in the first case showed pronounced destructive tendency by attacking the cartilage and bones, but in the second case this tendency had not yet developed. In the second case the circumscribed tumor of the capsule as bound to rupture into the bones. Both tumors are congenital and, according to Ribbert should be interpreted as due to disturbances in fetal development.

The diagnosis of the non palpable tumor is difficult, especially is differentiation from tuberculous. According to Gangolphi and Seibournt an important diagnostic sign is the difference in the circumference of the hanging and the suspended knee. In the roentgen picture the absence of trophic of the bone suggests the absence of tuberculosis. In cases of circumscribed tumors the prognosis is favorable as regards function, even though large sections of the capsule must be resected. Laeven considered the defect in such cases by free transplantation of fascia. Cases like the first one described radical relief can be given only by resection of the joint and extirpation of the entire tumor tissue.

J. MAYER (2)

Hoffstrom, J. So-Called Osteochondritis Dissecans of the Knee Joint (Beitrag zur Kenntnis der sog. Osteochondritis dissecans im Kniegelenk). *Acta Chirurg. Scand.* 9, 1, IV, 90.

Koenig, who established osteochondritis dissecans as a clinical entity denied its traumatic etiology. A definite solution of the problem of its etiology has not yet been reached. The author reports several cases as follows:

Case 1. The patient, a girl, 8 years old who fell on her left knee five years previously. This accident caused no swelling and she was not confined to bed, pain was only occasional. Subsequently repeated locking of the joint occurred and crepitation was noted on motion. The roentgenogram revealed small round splinter of bone in the inner condyle of the femur.

A median arthrotomy was done but no free joint bodies could be found. The anterior portion of the median meniscus was compressed and in shreds and as therefore extirpated. Histologic examination showed fibrous atrophy. As the symptoms remained unchanged after this operation, another roentgenogram was made. This revealed a broken off piece of bone. A second operation exposed a piece of cartilage as large as a thumb nail at the inner condyle of the femur which was separated from the rest of the cartilage by a slight groove. The sequestrum was removed but showed no histologic peculiarities. After the second operation there were no further symptoms.

Case 2. A laborer 25 years old complained of locking of the left knee which had occurred for one year. There was no history of trauma. Marked effusion in the knee was found. X-ray examination showed small piece of bone separating the inner condyle of the femur. Operation revealed small cavity in the inner condyle which was filled with a lump of pieces of cartilage and bone. The pieces of bone were removed but appeared normal on pathologic examination. A complete cure resulted. At subsequent X-ray examination an entirely similar condition was seen in the right knee joint.

Case 3. A laborer 3 years old, had noticed the protrusion of hard body on the inner side of the right knee joint for eight days. There was no trauma and no locking. The joint mouse was demonstrable only in the roentgenogram. A corresponding defect was present on the inner condyle of the femur. The joint mouse was removed by operation.

Case 4. A laborer 5 years old fell on his left knee 10 years previously, but only recently had become unable to extend the knee completely. A distinct focus was found on the outer condyle of the femur. No pathologic lesion was discovered at operation. The findings of subsequent X-ray examination were the same but there were no symptoms.

Case 5. A laborer 9 years old, had had stiffness of the right knee for 1 year. A scaly roughness on the posterior aspect of the patella was noted on X-ray examination. Operation revealed small piece of cartilage and bone separating the joint. Histologically the specimen proved to be bone surrounded by degenerating cartilage.

This disease occurs most often in males in the third decade of life, chiefly laborers. Its most frequent localization is the medial condyle of the femur. No case in which it is localized on the articular surfaces of the tibia has been reported. Occasionally both knee joints are involved. The condition occurs also on the head of the humerus and the head of the second metatarsal bone. An injury is often mentioned in the history but just as often no trauma is remembered.

The symptoms vary markedly. Occasionally the disease is discovered only accidentally. Pain on extension of the knee is a common symptom. If the joint body has been cast off the symptoms of joint mouse are those most prominent. According

the Kirschner point locking may occur before the joint mouse is cast off and often is due to injury of the meniscus.

The condition is usually revealed by the roentgenogram and on direct inspection of the opened joint, but in some cases it may be overlooked even when the joint is opened. The roentgenogram is very characteristic. The cast off piece of bone lying in the depression resembles an egg lying in a bird's nest. After the piece of bone has separated the depression in the joint contour indicates the original site.

In numerous cases no pathologic anatomical changes have been found in the joint cartilage occasionally a difference in the color of the cartilage is the only sign of the disease focus. Shortly before the separation the surface still adherent to the bone is covered with granulation-like tissue which usually contains the remains of bone. When the separation is complete the joint mouse becomes surrounded by cartilage. In the early stages the cartilage is histologically normal but later the cartilaginous necrosis constantly increases the bone is neverly always necrotic. There are no signs of inflammation. It is incorrect to draw far-reaching conclusions regarding the etiology from the histologic examination as the stage of the process in any particular case is not known.

Undoubtedly osteochondritis dissecans plays an important part in the origin of free joint bodies. The author reviews the most theories in detail particularly those of Barth, I. Hellström. In opinion it is significant that on extreme flexion of the knee joint the patella meets with the lateral portion of the medial condyle of the femur just at the site where osteochondritis dissecans generally appears. A blow reaching the patella in this position must be transmitted immediately to the femoral condyle. In contrast to Barth Kappas assumes that spontaneous healing may occur occasionally. Hellström agrees with this view on the basis of his fourth case. The process may be latent for years. Hellström attaches no importance in the traumatic etiology to severe trauma. Rather he is inclined to regard repeated slight trauma as responsible since in the beginning there is usually only partial separation. Slight trauma is often forgotten and therefore are not mentioned in the history. Ludloff's conception is to be rejected as osteochondritis occurs also at sites where no end artery has been demonstrated. The author warns against applying the findings of Axa's experimental investigation to human joints.

I conclude Hellström states that many cases are overlooked even if operation as the average surgeon does not know the peculiarities of the disease. A important etiological factor he believes is an incomplete fracture caused by the pressure of the patella against the condyles of the femur. In some cases this may occur in the condyle of the femur and in others in the patella. A frequent finding the cartilage shows no fracture. It is to be assumed

that as it is elastic, it can withstand trauma which break the more delicate subcondral bone trabeculae.

As a rule the treatment must be operative. Free joint bodies must be removed. If no symptoms have developed and if the process is discovered accidentally in roentgenogram there need be no hurry but generally an operation will be necessary ultimately. In cases of beginning arthritis an immediate operation is indicated. It is wrong to wait in every case until a free joint body has formed. With regard to the technique of operation the author recommends the median or lateral parapatellar incision. In order to prevent a recurrence the still adherent portions of the cartilaginous focus must also be removed. The depression in the articular surface should be smoothed with the curette and freed of granulations. A careful inspection of the articular surfaces is important. Filling of the defect as with fat is not necessary. Without operation the prognosis is unfavorable as secondary arthritis is usually superimposed. After operation the prognosis is good.

An additional case is reported at the end of the article. The patient was a laborer 37 years old who had slight effusion in the knee joint. There was no history of trauma. A small joint body was palpable in the lateral articular space, and in the roentgenogram a small splinter of bone was seen at the lateral border of the patella. At operation a small free joint body of cartilaginous substance was found. There was corresponding slight depression on the outer femoral condyle and fissure 0.5 cm long on the posterior aspect of the patella. This portion was lying loose. The histologic examination showed the joint body to be cartilage which had separated into fibers. This case is important because there was simultaneous injury of the cartilage on the patella and that on the condyle of the femur.

SCHWABER (Z.)

Bircher, E. A Contribution to the Pathology (Arthritis Deformans) and Diagnosis (Arthro-Endoscopy) of Meniscus Injuries (Beitrag zur Pathologie—Arthritis deformans—und Diagnose der Meniscus Verletzungen—Arthroendoskopie). *Beitr. Klin. Chir.* 9, 1914, 39.

The first 100 patients subjected to cartilage operations at the Cant. Hospital of Aarau (cases reported by Baumann) almost without exception resumed their occupations within eight to ten weeks. In one half of these cases full restoration of function could be assured 1 month after the operation. Since the report mentioned fifty additional cases have been operated. As Baumann ascribed an unsatisfactory result in a few of his cases to the presence of arthritis deformans, it is important to determine whether or not the cause lay in the operation itself. A careful review however showed that the extirpation of the meniscus played a subordinate part as the etiological factor in arthritis deformans.

Birther undertook to approach the question from a pathological and anatomical aspect. In twenty of fifty cases of meniscus injury he removed a piece of cartilage, to 1 cm long and 1 cm wide, from the outer edge of the lateral condyle of the femur. At the same time a careful X-ray examination was made. In nine of these twenty cases the X-ray examination showed definite arthritic changes. In three the findings were questionable. Histologic examination showed arthritis deformans in thirteen, in seven the tissue excised was normal. Of the twelve diagnosed by the X-ray as arthritic, eight were found on histologic examination to be normal, while of the eight shown to be free from arthritis by the X-ray examination, seven showed advanced histologic changes. Therefore, in fourteen cases (70 per cent) the X-ray examination was of no value in the diagnosis with respect to arthritis deformans. Control examinations of postmortem specimens gave similar results.

From these observations it is obvious that we must be very cautious in making diagnosis of arthritis on the basis of an X-ray examination. Since in many cases removal of the meniscus was combined with arthritis, it must be assumed that the arthritis had been present before the injury and the question whether arthritic changes predispose to meniscus injury must be considered.

To make certain of the diagnosis, which is generally difficult to do, Baumann made an endoscopic examination of the knee joint. The knee joint was filled with oxygen or nitrogen by means of an apparatus intended for the production of artificial pneumothorax. It was then punctured with a trocar whose cannula was provided with a lens. Through this cannula the laparoscope of Jacoby was introduced. Most of the interior of the knee joint could be seen by this method. Twenty cases were examined endoscopically. In eight of nine cases of meniscus injury the diagnosis was confirmed. The endoscopic examination regularly showed pictures differing from the normal.

Arthro-endoscopy renders the joint visible and permits the recognition of degeneration. Its application to the shoulder joint, foot, and hip has been shown by experiments on cadavers to be impossible. Its use must remain confined to the knee joint. Tuberculous affections with destruction of the cartilage and granulation tissue in the joint do not permit examination on account of the diminution in the size of the articular cavity. On the other hand, the method was effective in establishing the integrity of the internal surface of the joint in suspected cases of incipient tuberculosis. (Continued) (X)

Gammurati, M. A Rare Case of Hereditary Symmetrical Osteitis of the Lower Limbs (Di un raro caso di osteite simmetrica ereditaria degli arti inferiori). *Chir d'oggi* 1920, 19, 66.

The author records skiagrams of a 7-year-old boy and his father who suffered from a condition involving the femora and tibiae which had a painful onset

and resulted in great bony thickness due to symmetrical new bone formation. Similar changes were found also in the bones of other members of the family through four generations. The condition is characterized by localization in the bones of the leg, multiplicity of sites, hereditary character, symmetry, lack of suppuration, and painful onset.

In the author's opinion the cause is either hereditary syphilis or Paget disease. Both the son and father mentioned had negative blood Wassermann reactions but the reproduced skiagrams are apparently those of syphilitic bone.

KILLGUS SWED, M.D.

Well, S. Functional Testing of the Lower Extremities with the Aid of Two Spring Balances (Funktionsprüfung der unteren Extremitäten mit Hilfe zweier Federwaagen). *Zentralbl f. Chir.* 1922, 48, 1406.

The normal person with symmetrical body structure instinctively assumes such a position as standing that the center of gravity of the body is exactly over the sagittal midline of the supporting surface. If such a person is made to stand with each foot upon a spring balance both scales will show the same weight.

In every case of organic disease of one leg, the load upon that leg is instinctively diminished, either reflexly because of pain or for static reasons. Therefore by weighing with two scales the extent to which one leg is favored the importance of certain deformities, the progress of the healing process after injuries, and the success or failure of certain operations may be judged.

The author cites the findings in pseudarthrosis of the femur, contractures at the hip and knee before and after treatment, congenital infantile paralysis, and sciatica. (Continued) (X)

Asherson, G. The Etiology of Koehler Disease of the Heads of the Metatarsal Bones (Die Ätiologie der Koehlerschen Erkrankung der Metatarsalköpfchen). *Beitr. Klin. Chir.* 1920, 45.

In two resected specimens histologic examination showed wedge-shaped necrosis of the epiphyses in association with reparative processes. The author is opposed to the theory that the condition is due to trauma. He attributes it to embolic obstruction of the corresponding epiphyseal end artery by tuberculous fragments or fragments with non-virulent pyogenic cocci. The distal thickening of the shaft he believes is due to simultaneous emboli in the metaphyseal arterial branches causing serious inflammation of the bone. The local processes at the terminal joint in Koehler's disease with secondary arthritis deformans are similar to the formation of free cartilaginous-bony bodies associated with secondary arthritis deformans in the other joints, but in the latter condition the traumatic etiology is evident. (Continued) (X)

FRACTURES AND DISLOCATIONS

Lorenz, A. A New Method of Treating Irreducible Acquired or Congenital Hip Dislocations. *Arch M J & Med Rec* 923 civu, 30

The author recommends his so called bifurcation operation and reports the results he has obtained with it. He believes this operation is indicated especially for old ununited fractures of the neck of the femur, instability of the hip due to tuberculous, acute infectious, or acute arthritis, old painful congenital dislocation of the hip and pathologic dislocation following typhoid, osteomyelitis, and other similar conditions. It gives a stable movable hip and is to be preferred to the Gant osteotomy.

PHILIP LEWIS, M.D.

Ashley, A. D. The Lorenz Bifurcation Operation. *Arch M J & Med Rec* 933 civu, 36

Although congenital dislocation of the hip, ununited fracture of the neck of the femur and coxa vara have different etiology, the disturbance of function is similar in all three. In the three conditions causing similar functional disturbances should be similar or identical treatment.

In the three conditions mentioned the pelvis is no longer propped up by the bony pillars of the femur but is merely suspended by the upper parts by soft and jerking tissue—the capsule and the pelvic trochanteric muscles. When subjected to undue strain, especially in adults of considerable weight, these soft parts become painful.

The author describes the bifurcation operation which consists in making an osteotomy below the trochanter and displacing the lower fragment so that it will occupy the position of the normal head in the acetabulum. He emphasizes the point that the osteotomy is a procedure primarily to replace the position of the substitute head.

The indications for operation are inability to walk or severe pain. Ashley does not draw an operation for cosmetic reasons but states that the cosmetic results have been very good.

The technique of operation is given briefly as follows:

The patient is placed upon his unaffected side with the affected thigh slightly flexed. A longitudinal incision about 10 cm long is made through the skin and muscle exposing the outer surface of the femur. A broad chisel is then applied to the bone so as to make an oblique line of fracture extending from the anterior aspect posteriorly and distally. The upper extremity of this cut corresponds to the upper level of the acetabulum. A complete osteotomy is performed. When the fracture is complete the lower fragment is manipulated as in the reduction of congenital dislocation of the femur by the closed method. After the fragment has been thoroughly abducted it is forced in ward and upward into the acetabulum. The fragments are held in position by the abduction

of the lower fragment. The limb is then placed in plaster in abduction at 35 degrees.

The patient is allowed out of bed in two weeks and may then begin standing and walking with crutches. After six weeks the plaster cast is cut and knee movements are begun. The cast is removed at the end of three months. The after treatment consists of massage and active and passive movement of the pelvic trochanteric muscle.

PHILIP LEWIS, M.D.

Deutschländer, C. The Treatment of Old Congenital Hip Dislocations (Die Behandlung der veralteten angeborenen Hüftverrenkungen). *Deutsche m d H. klinische* 9, xlviii, 476

The treatment of old congenital dislocation of the hip is difficult because of the complications which develop not only in the hip joint itself, but also in the back and the loins. Frequently, high-grade lumbar lordosis is present, especially in cases of bilateral luxation. Aside from purely symptomatic and mechanical measures, such as massage, hot air exercises and the use of belts, corsets, etc., the treatment consists of non-operative measures, to effect reduction, which are applicable to a small group of cases and operative reduction, in larger group. The author discusses these methods of treatment briefly and then speaks of the radical operation he advanced in 1901 in which the iliopectus is utilized in buttonhole mechanism. In thirty cases operated upon by this method there was marked functional and anatomical improvement.

On an anatomical basis, cases must be divided into two groups: those with complete concentric implantation of the tendon and normal motion, and those with eccentric tendon implantation and somewhat limited hip motion. In two-thirds of the cases of children between 8 and 15 years of age a concentric tendon implantation was accomplished. In those more than 15 years old only eccentric implantation could be accomplished. So far there has not been a single fatality.

The radical operation is a serious procedure but its danger should not be overestimated. The best treatment is the bloodless method of Lorenz, carried out to the proper age. *Lehrzeit* (7)

SURGERY OF THE BONES, JOINTS, MUSCLES, TENDONS, ETC.

Girdlestone, G. R. Some Points in Reconstruction of the Surgery. *Practitioner* 9, 456

Cases of injury due to war wounds or accidents may be divided into (1) those in which treatment is obviously needed, and (2) those in which careful consideration is necessary to determine what if any treatment should be given.

The author cites the case of a man who had good use of thumb and two fingers of hand which was partially paralyzed. Although some improvement could be hoped for after operation and treatment

requiring year time it is considered best to do nothing as the man was able to perform his work well in spite of the paralysis.

In determining what to do in a given case the author suggests that the surgeon put to himself the following questions: (1) At what result you aiming? (2) How far will you succeed? (3) Is it worth while?

The result to be achieved is maximum function. Form is of secondary importance.

In judging and treating such patients, surgical knowledge, technique and ability are necessary and in addition: (1) a study of the case from all angles, including the patient's occupation; (2) the power to recognize the essential points of disability which may not be the most obvious; (3) the ability to judge of the probable end results of the various methods of treatment as regards the patient's ultimate health, activity, freedom from pain, and fitness for work.

The patient is better able to decide with regard to treatment if he realizes the tedium of the various stages and the end result expected.

MAURICE HOWARD M.D.

Schwartz, E. The Anatomical Processes in the Regeneration of Tendons and in the Plastic Repair of Tendon Defect by Tendon, Fascia, and Connective Tissues: An Experimental Study (Über die anatomischen Vorgänge bei der Sehnenregeneration und dem plastischen Ersatz von Sehnenlücken durch Sehne, Fascie und Bindegewebe: Eine experimentelle Studie). *Deutsche Zeitschrift für Chirurgie* 9, 1909, 30.

The author first gives an interesting historical review of the question of the healing of tendon wounds. As the result of recent investigations Rehn claims that function is necessary not only to maintain the vitality of the transplanted tendon tissue, but also for the regeneration of the tendon and tendon-like tissue. Bier on the other hand assumes that the ultimate cause of regeneration is a chemical stimulation due to hormones which exert their action from the tendon stumps. According to Bier the tendon tissue has an unusually great capacity for regeneration.

By means of experiments the author attempted to determine whether a tenotomized or partially or completely extirpated tendon regenerates when the peritendon is intact or when it is completely removed. Fourteen experiments answered the first question in the following manner:

When the peritendon remains intact replacement tissue forms in the defect which functionally takes over the part of the deficient tendon but in the course of time in contrast to normal tendon becomes stretched, so that the function of the foot gradually becomes poorer. The tendon cells themselves are no longer concerned in the growth of the new tendon; the new formation of the tendon originates in the peritendon. In the first three months the new formation is completed. The new tissue never shows the silvery gleam of normal tendon. The

new tissue is a replacement tissue which is controlled by function. There is no true regeneration.

In the second large series of experiments the peritendon was carefully removed. As a result, connective tissue strand was formed which consisted of large vessels, nerves, and vascular connective tissue transformed into tendon-like strands. When function was entirely excluded by division of the peritendon, cicatricial connective tissue was formed in the tendon defect by granulations just as in any other wound. A suitable arrangement of fiber-like strands, such as were seen in the former experiments, was not observed. These facts indicate the great importance of function in the formation of tendon replacement tissue. In general we do not know the primary cause of healing in wound. There is no doubt that chemical changes play an important part but we do not know their nature.

The experiments show also that there is no transformation of connective tissue into true tendon tissue; the newly formed tendon is and remains replacement tendon. The author gives emphasis to the fact that it is function alone which can produce tendon-like tissue from connective tissue which will serve the purpose of a replacement tendon.

The rest of the article treats of transplantation experiments with tendon tissue. It is important that the peritendon be transplanted with the tendon as the new formation of the tissue proceeds from the peritendon after it has become accustomed to its new surroundings. Here again, function plays an important part as it renders the newly formed tendon tendon-like. The transplanted tendon itself undergoes destruction and is replaced by cicatricial tissue; hence, the majority of cases becomes firmly united with the surroundings and excludes the possibility of function. In contrast to this, the transplantation of fascia by Kirschner's method is to be highly recommended. The transplanted fascial tissue is for the most part maintained and the fascia remains glistering. Very good replacement tendons may be formed from such fascial tissue. The use of other connective tissue for tendon replacement in the form of braided tufts of connective tissue is less desirable. KOCI (2)

Iwaka, G. The Plugging of Bone Cavities with Free Transplants of Fat (Zur Mobilisierung von Knochenhöhlen mit Fetttransplantaten Fett). *Deutsche Zeitschrift für Chirurgie* 9, 1909, 336.

The plugging of bone cavities with free transplants of fat was first attempted by Altkaus and Krübel. The three patients operated on by Altkaus are recently examined by the author after ten years. In the first and second cases, which presented closed tuberculous foci in bone, the process healed in very short time but complete replacement of the implanted fat tissue by bony substance did not occur. In the third case (chronic osteomyelitis) no traces of bony defect were demonstrable.

A similar operation was performed in twenty-two cases at the Garre clinic. Krübel reported ten of

them in 1913. Of the remaining twelve cases seven were treated more thoroughly. The result varied.

In general, it may be said that replacement of the implanted fat tissue by bone does not occur when the postoperative course is completely reactionless, but that slight inflammation causes complete disappearance of the bone cavity after a time if the plug is intact. The plugging was particularly useful in cases in which neighboring joint was opened during the operation or it was necessary to remove parts of the joint. H. A. (Z.)

Lempert, F. A Method of Facilitating Plastic Operations on the Deltoid Muscle (Zur Fächerung der Deltoidemuskelplastik). *Zentralbl. f. Chir.* 9, 187, 08.

The outer third of the clavicle having been resected, the portion of the trapezius muscle which is here inserted is freed and drawn over the acromion as far as the middle of the deltoid muscle where it is secured with silk sutures. The periosteal sheath of the clavicle is then joined to the periosteum of the humerus. The mechanical result of the resection of the clavicle is lengthening the lever-arm of the muscle as such as to suggest that in similar cases shortening of the clavicle might be freely carried out on principle even when there is no limitation of motion in the joint. There is no deformity or protrusion of the scapula. In the author's opinion, lateral fixation of the scapula to the opposite side might give still greater strength by drawing on the normal shoulder. VALLEY (Z.)

Scholz, O. E. New Arthrodesis of the Shoulder (Neue Schulterarthrodesis). *Reichsbl. f. Chir.* 9, 1, 5.

The author has devised the following method of arthrodesis of the shoulder joint:

The skin incision is made from the middle of the spine of the scapula to the articulation of the acromion process with the clavicle and from here distally to 6 cm. below the acromion process. The capsule of the joint is then opened by longitudinal incision and the head of the humerus is luxated. The head of the humerus and the glenoid cavity are denuded of their cartilaginous covering and the subacromial bursa is excised. With rasps the periosteum is reflected from the upper surface of the acromion process over an area 3 cm. wide and 5 cm. long and also to like extent from the under surface. Two parallel cuts are made in the head of the humerus, extending from the posterior lateral to the antero-medial aspect. A two-saw with blades in apart is used. The segment of bone limited by these two cuts is cut out. The chisel from its base at a depth of 3 1/2 cm. it thus furrows the stripped acromion is inserted whereupon the head of the humerus comes to lie in the glenoid cavity.

Immediately after the operation the scapula firmly united with the humerus could be moved up and down.

The advantages of this method are:

1. The freshened surfaces coming into contact are considerably larger than those formed by other methods.

2. The musculature of the shoulder girdle remains entirely uninjured; the trapezius is bound strongly not only to the acromion process, but also to the humerus.

3. The desired degree of abduction, elevation, and rotation for the arthrodesis can be obtained by varying the length of the incision in the head of the humerus. KROCK (Z.)

Wreden, R. Partial Endoneural Resection in the Treatment of Spastic Contractures of the Hand in Infantile Hemiplegia (Partielle endoneurale Resektionen zur Behandlung spastischer Contracturen der Hand bei infantiler Hemiplegie). *1. band d. R. Chir. Putsch-Ges. Petrograd* 9.

Acting upon the assumption that spasticity and loss of function of the hand can be traced primarily to preponderance of the motor impulses in the median and ulnar nerves over those in the radial nerve the author attempted so to reduce the tension of the transverse incision in the former that there could be no destruction of the motor and sensory fibers such as occurs in Stoffel's operation. The median and ulnar nerves were exposed in the middle third of the forearm, the perineurium was divided, and elliptical pieces 5 to 6 mm. in length and one half the diameter of the nerve in width, were resected from the nerve trunk. The slit in the perineurium was then closed with fine catgut.

Immediately after the operation the hand assumed position midway between flexion and extension. In the course of two weeks active flexion again appeared but during period of observation from six to ten months it did not reach its former strength and there was no essential improvement in function. With the exception of less acute perception of pain in the ulnar nerve area, temporary paresthesia of the palmar surface of the hand on movement, loss of sensation was not noted. Physiotherapeutic massage was begun toward the end of the first month. Up to the present time three children have been operated upon.

The objection made by Gergoloff in the discussion of this paper that such elliptical excisions cause serious changes, is not of much practical importance as the defect made is small and the intervention too conservative. On the other hand, regeneration takes place slowly enough to permit an increase in function of the opposing muscles.

R. Kitaki stated that insofar as the motor fibers are sacrificed, Wreden's operation is more radical than Forster's, since the paralytic components increased.

Gergoloff commended Wreden's purpose to strengthen the opposing muscles. By way of precaution he warned of the temporary character of the result and the possibility of neuroma formation.

Hess expressed himself as against Wreden's proposition because the motor fibers are destroyed.
VON DER OTTEN-SACKEN (2)

Rahm, H. The Moresatin Plastic for Contractures of the Fingers (Die Moresatsche Plastik bei Fingercontracturen) *Brich H. Chir.* 93, 1924, 14

The procedures devised up to the present time for the treatment of contractures of the fingers are not satisfactory. The tendon transplantation of von Harder is too complicated, the silk tendons of Lange often do not heal and disarticulation as a deforming process. Moresatin's procedure is as follows:

The very abundant skin present on the flexor surface of the fingers, which may even form a web, is split longitudinally into two layers and transverse incisions are made in both of the folds of the web alternating right and left, until all tissue hindering the extension of the finger has been divided. If the finger can then be completely extended the small triangular skin flaps formed are alternately reflected back over the wound surface so that a triple serrated line of incision is formed. The flaps are fixed in position by a few sutures. A dressing is then applied and the finger immobilized for about eight days. At the end of this time hand therapy and frequent motions, first passive and then active are begun. If it is necessary to divide a tendon which has been encased in the cicatricial masses the finger is grasped by a neighboring finger during closure of the fist and carried along into the palm of the hand.

Three cases in which this method was used successfully are reported. LÖNNER (2)

Schulz, O. R. Peri Articular Fixation of the Knee Joint (Paraartikuläre Fixation der Kniegelenke) *Chir. u. Orth. J.* 10, 1926

T. immobilize the knee joint in cases of complete paralysis of the legs, the author proceeds as follows:

A longitudinal incision 6 to 10 cm in length is made on the inner side of the knee joint. The soft tissues are incised down to the periosteum of the

femur and tibia. The fibrous capsule of the knee joint is divided, but the synovial membrane is carefully avoided. The periosteum is incised and a strip 1 cm wide is elevated. With chisel, a groove 1 cm wide and 1 cm deep is made in the femur and tibia along the entire length of the incision. A graft from the tibia, corresponding in shape to the groove and the periosteum and fibrous capsule are sutured over it. Another splint from the tibia is placed in the same way on the outside of the knee.

In two cases the technique was more simple in that the middle portion of the fibula was utilized only on the lateral aspect of the knee joint.

In every case firm bony union resulted and is still present six months later. This method gives firm and more lasting results than immobilization by means of tendon fixation. KROG (2)

Epstein, G. The Question of Operative Procedures for Congenital Deformities of the Foot (Zur Frage bürgerlicher Eingriffe bei kongenitalen Fehlbildungen) *Verhandl. d. Russ. Chir. Gesellsch.* 933

For the correction of club foot Epstein favors atypical wedge excisions. In the discussion of his paper Albrecht stated that those who adhere to bone operations in cases of club foot underestimate the element of traumatic osteoporosis which makes it possible, when limited partial correction has been achieved in the second stage to obtain complete correction with the greatest ease in weeks later. Otten-Sacken stated that the indications for the treatment of club-foot formulated by Kocher forty four years ago are still correct. He had down the rule that tenotomy of the Achilles tendon should be resorted to only after satisfactory adduction has been obtained and supination still makes it necessary. Pathological anatomical studies demonstrate the impossibility of obtaining a quick cure in such complicated deformity. In the orthopedic clinic of Turner the difficult refractory cases are treated by edge excision supplemented by corrective orthopedic measures.

VON DER OTTEN-SACKEN (2)

SURGERY OF THE SPINAL COLUMN AND CORD

Hackembroch, M. Congenital Curvature of the Spine as an Intra-Uterine Deformity of Weight Bearing (Bewegung zur Kenntnis der angeborenen Rückenkrümmung als intrauteriner Belastungsdeformität) *Arch. f. orthop. Unfall-Chir.* 93, 1926

Congenital curvatures of the spine are generally divided, according to their etiology into those of endogenic origin, the result of germinal variations, and those of exogenic origin. The latter are intra-uterine deformities of weight-bearing and must be differentiated from cases in which the deformity was caused by intra-uterine disease. The exogenic scolioses are in the minority. Boeckh considers

every habit scoliosis retarded congenital form.

The author reports three cases of congenital curvature of the spine, two cases of scoliosis and one case of kyphosis which were produced entirely exogenously by intra-uterine pressure. There are no bony malformations in the vertebrae. All of the three cases were further characterized by resistance to treatment with the plaster bed. BUNSON (2)

Mistler, W. J. Fracture of the Spine with Cord Involvement. *J. Bone & Joint Surg.* 9, 1927

The indications for operative interference in fracture of the spine cannot be delimited sharply. Laminectomy is indicated in injuries resulting in damage

to the cord either through crushing without complete severance or by intra- or extra-dural hæmorrhage or oedema. Injury of the cauda equina should be treated in the same way as injury to peripheral nerve, operation being performed if there is disturbance of function.

Fracture of the bony column without cord involvement should be treated by the application of a bony splint or plaster jacket or both. If careful mapping of sensory changes within two or three hours shows increasing involvement of sensory function operation is indicated. As shown by Allen time is an important factor and definite course should be mapped out at least within the first twenty-four hours. It is only in lesions of the cauda equina that late operation for cord damage may be of some use. Allen showed also that when dogs were subjected to identical crushing injuries of the cord those treated by median longitudinal section within a few hours of the injury to combat the oedema recovered function while the others did not.

The laminectomy performed by Mixter is that advocated by Gaenslen. The muscles of the back are dissected away from the spinous processes and laminæ on one side only. The spinous processes are then cut away from the laminæ with a forceps, being left attached to the muscles on the untouched side. The laminæ are removed with rongeurs and all bone chips are preserved for future use. The various procedures indicated in given cases such as the removal of clot or in driven fragments of bone are now carried out. The articulations, if not already destroyed are crushed and bone chips are laid between the bumps of the laminæ on both sides. The muscles are sutured to the interspinous ligament and the fascia and skin are closed.

D. VED R. TELSON, M.D.

Turner H. An Unusual Case of Typhoid Spine with Symptoms of Spinal Cord Affection
Brit. M. J. 9 3, 4

Involvement of the spine in the typhoid process probably takes place during the flourishing period of the disease, and doubtless is not very rare. The symptoms of this complication may pass unnoticed on the background of the general picture of the illness.

Typhoid spondylitis is a form of subacute inflammation involving the periosteum, ligaments, and intervertebral articulations. Gaffney term, "peri-spondylitis," is the most suitable to describe the pathologic changes.

Chiefly the posterior lateral parts of the laminæ are involved, their mobility probably influencing the exacerbation of the process.

The picture of typhoid spondylitis as revealed by the X-ray is very characteristic. There is narrowing or partial disappearance of the intervertebral spaces with lateral protrusion of the contiguous edges of the bodies. Dense vertical shadows on one or both sides of the midline spread over the bony bridges of newly formed bone by which the posterior parts of the column are fused together.

Occasionally there is a scoliotic curve due to asymmetrical disposition of the disease.

Clinically the symptoms of infectious spondylitis differ markedly from those of Pott's disease. Acute excruciating pain in the back is the chief complaint. Digital pressure reveals intense pain in the lateral parts of the spine. The soft tissues of the region involved may be thick and oedematous. An intermittent fever generally accompanies the initial stages of the process.

The involvement of the spine in the typhoid process is a frequent integral part of the disease, the infection persisting in a latent state. The awakening of the process is generally brought about by trauma. Therein lies the explanation of the development of typhoid spondylitis long time after recovery from the original disease.

The author reports a case of typhoid spondylitis in which there was suppuration. This is the only positive case known in which suppuration complicated the spinal affection. SAMUEL KANEY, M.D.

Hoffmann, V. A Propping Operation on the Vertebral Column. Thoughts on the Operative Treatment of Spondylitis (Eine Stützplattenoperation der Wirbelsäule. Gedanken zur operativen Behandlung der Spondylitis). *Zentralbl. f. Chir.* 9, 21, 443.

On both sides of the vertebral column a rib with periosteal and vascular flaps is placed in the trough over the joints of the transverse processes of the ribs to form bony union. In addition a dorsal prop is raised in such a way that a free rib transplant is laid into the angle between the arch and the spinous process.

The operation is carried out in two stages, one side being operated on at a time. The use of anaesthesia and the local application of adrenalin to prevent hæmorrhage from the musculature and nerves are advisable. The vertebral column does not lose its anatomical support through the removal of the ribs. BOER (2)

Leri, A. On Lumbar Arthritis. *Am. J. Clin. Med.* 9 3, 333, 3.

By lumbar arthritis Leri means the localization of chronic vertebral rheumatism in the lumbar vertebrae. This affection which was frequent during the war produces symptoms very different from those hitherto recognized as characteristic of chronic vertebral rheumatism.

The patients are usually between 30 and 40 years of age and enter the hospital on account of lumbago or sciatica. Usually this condition is unilateral, but it may be bilateral or alternating. Complexive made of sharp pain, both continuous and paroxysmal, in the lumbosacral region, and often also in the buttocks and thighs. Sometimes the pain is limited to the calves.

The posture is variable. Only rarely does the patient stand erect. As a rule he bends his body forward and holds his knees flexed. It may also

bend either to the right or to the left. Sometimes there is a slight puffiness, without actual oedema, redness or heat in the lumbar region. The bony protuberances are merely obliterated. When the patient bends forward there is an accentuation of the line of the lumbar spaces and above this a depression. In the normal person there is a continuous arch. This sign is almost pathognomonic. There is little or no contracture of the lumbosacral muscles.

When lying extended on the bed, the patient is able to stretch himself with perfect ease so that his head, pelvis, and feet touch the plane of the bed.

The roentgenogram shows sinking, a transparency and especially an excessive grooving of the vertebral bodies with enlargement of the superior and inferior surfaces (*verlebre en dishels*).

Sometimes a tapering of the surfaces and a sort of piruet beak is noted. Such is very characteristic and sometimes more or less oluminous nodules of neo ossification, thickening of the cartilages and abnormal undulation of the vertebral borders are found.

Anatomically there is an osteophytic proliferation. Frequently this is crown-shaped.

The malady progresses by repeated attacks, each lasting 10 to 20 months and followed by apparent but incomplete recovery.

The disease is evidently not due to loci, tuberculous, or gonorrhoeal. Rhusmetoid spodyloma has no relationship to it whatever.

In Leri's opinion the cause is to be found in the abnormal living conditions to which soldiers are subjected in active warfare. Often they sleep on damp ground or in the water and in the trenches they rest their backs against freshly turned earth. Frequently the muscles of the back are overexerted by long marches and the carrying of heavy packs. Temperature seems to play little if any part.

The disease can be readily distinguished from functional disorders by the definite deformity and by the X-ray findings. A knowledge of the nature of this condition and its mode of evolution is of importance with regard to medico-military decisions.

The treatment is the administration of salicylate of sodium and immobilization. The author shows the postural and body changes by numerous plates.

CLAYTON F. ANDERSON, M.D.

SURGERY OF THE NERVOUS SYSTEM

Punasepp, L. Transplantation of Spinal Nerve Roots in Flaccid Paralysis (Ueber Transplantation von Rückenmarksnervenwurzeln bei schlaffen Lähmungen). *Fest. Mitt.* 9, 443.

Punasepp undertook to transplant the nerve roots in four cases of infantile paralysis in which most of the muscles, for example, of the whole lower extremity were paralyzed and in which orthopedic procedures were ineffective. After laminectomy he cut through the roots of the second, third, and fourth lumbar and the eleventh and twelfth dorsal nerves and sutured the second and third lumbar nerves to the eleventh dorsal and the fourth lumbar to the twelfth dorsal. In these cases movement could be observed along the previously paralyzed lower extremities and the circumference of the extremities was increased. In the cases in which the legs had been paralyzed two years or longer the results were uncertain. In one case the injury of the cauda equina, Punasepp sutured the central portion of the cauda equina to the twelfth dorsal nerve. After two months, incontinence of urine ceased. Punasepp believes that restoration of function undoubtedly takes place and that technically the operation is entirely practicable. *McKENNOR (2)*

Lehmann, E. P. Per Arterial Sympathectomy. 4. *SWG* 923, 1934, 30.

In the dog, the perivascular sympathectomy of Leriche does not result in the physiological changes in the extremity noted by Leriche in clinical cases. Vasodilation resulting from proved total sympathectomy does not affect wound healing.

H. A. McKENNOR, M.D.

Halestead, A. F. and Christopher, F. Per-Arterial Sympathectomy. *J. Am. M. Ass.* 923, 1934, 77.

Dilation of the cervical sympathetic nerve causes dilation of the blood vessels of the eye on the same side. Stimulation of the peripheral end of the nerve causes vasoconstriction and blanching. The sympathetic nerves pass through the adventitia of arteries to form plexuses in the pars media.

Leriche observed that puncturing the external layer of blood vessel causes the vessel to contract, arrest its pulse and decrease its size. If the cellular layer is excised, the diminution is not progressive to one fourth or one third the normal size. After three to fifteen hours secondary signs appear: (1) elevation of the local temperature from 2 to 3 degrees, giving subjective sensation of heat; (2) elevation of the arterial pressure possibly as much as 4 cm. of mercury; and (3) an increase in the amplitude of the oscillations. After per arterial sympathectomy the vasodilator reaction is transitory, becoming attenuated from the fifth to the sixth day and disappearing after from three to four weeks.

In Leriche's operation the artery is isolated for 3 to 4 cm. the sheath is divided, and with one part held with the forceps, the tunica adventitia is dissected away with knife or cannular sound until the vessel is completely denuded. Leriche has performed the operation fifty-four times on the following indications: canals or similar syndromes eleven cases; painful at myia, three cases; contractures following trauma, nineteen cases; extensive traumatic oedema, four cases; trophic oedema, one case; ischaemic sequelae, four cases; trophic sloughs on stump, one case; trophic sloughs after per-

section, ten cases: a sore on the heel after medullary injury, one case varicose eczema, one case trophic disturbance after frostbite, one case spasmodic paralysis, one case to modify the pressure of the cerebrospinal fluid, three cases Jacksonian epilepsy, two cases puerperal one case intermittent claudication, one case and erythromelalgia, one case.

In Leriche's opinion, per arterial sympathectomy is often very efficacious in the relief of pain, will influence symptoms of muscular hypertonia, and is beneficial in trophic disturbances leading to ulceration.

The authors report the employment of per arterial sympathectomy for endarteritis obliterans associated with pain and numbness of the right foot in a patient aged 55 years. The pain radiated to the calf of the leg and the ankle was weak. The patient was unable to walk more than half block at a time. For four days and nights the pain became so excruciating that sleep was prevented. The right foot is painful when manipulated, and to a less extent the right calf was painful on palpation. The urine contained faint trace of albumin and few hyaline casts. The Wassermann test was negative. The patient was not benefited by treatment with Locke's solution, sodium citrate, potassium iodide, sodium bromide, chloral hydrate, nitroglycerine, thyroid extract, sodium nitrate.

Per arterial sympathectomy was done on the right femoral artery at the juncture of its middle and lower thirds. The adventitia was stripped completely off for a distance of 5 cm. The patient was discharged from the hospital on the thirteenth day after operation. As a result of this treatment he is able to work on his feet for nearly twelve hours a day as cashier in a restaurant, and can walk a mile or more. He has only slight pain when he walks rapidly and the numbness has practically disappeared. The leg is warm and taut and thermal discrimination is normal.

WALTER C. BURKETT, M.D.

Callender, G. L. Arterial Decortication. 4 Surg. 9:317, 1915.

Leriche has called attention to certain definite results which follow the removal of the sympathetic nerve plexuses which lie in the intimal sheath and adventitia of large blood vessels. These structures were surgically removed from the femoral artery by Jaboulay. His successful results in cases of perforating ulcers of the foot, and less successfully from the coria trunks in certain visceral disturbances. The technique is as follows:

The main arterial trunk is exposed by the classical route of incision, considerable distance proximal to the part affected. The external fibrous sheath covering the artery is then incised for a distance of 8 to 10 cm. and the artery with its inner and more intimate sheath and its adventitia is exposed. This inner sheath which is fused with the adventitia of the artery is grasped with tissue forceps and incised directly on the vessel wall. Traction is maintained

on one of the lips of the sheath of filmy tissue thus isolated, and this structure completely freed from the artery over the length of the incision with a knife and fine scissors. In this manner the artery is stripped of its external coat, together with the fibrous tissue adherent to it.

The immediate consequence of the denudation of the artery is a diminution in its caliber which progresses until the artery assumes the appearance of a small whitish cord suggesting a nerve trunk.

Leriche constantly found postoperative increase in the surface temperature distal to the decortication. He stated that this was noted once on the evening of the operation but more often on the following morning. Usually however it occurred thirty-six hours after the operation and marked the onset of vasodilation. In most of the cases reported the local hyperthermia disappeared about the fifteenth day after operation.

Leriche reported also constant postoperative rise in the systolic pressure distal to the point of operation. This has not been confirmed by the author.

Leriche has cured traumatic disorders of the B. Bunsen-Frömmel type in which there are contractions and pareses and the complete picture may present muscular trophy exaggeration of the knee jerks, changes in the cutaneous reflexes, and disturbances in objective and subjective sensibility. Vaso-motor secretory and trophic disturbances are noted in the bones, skin, hair, and nails.

Another rare but well recognized clinical picture which has yielded to arterial decortication is the causalgia of Wei-Mitchell.

Certain ulcers which occur in impetigo trunks over areas not subject to pressure and which are not caused by infection are very refractory. According to Leriche several ulcers of this type have closed promptly after decortication of the femoral artery and their scars have remained sufficiently resistant to bear the use of apparatus.

The author reports a series of ten arterial decortications which were performed on six patients. In one case three arteries were decorticated for disease of three extremities while in another the operation was performed on two arteries for disease in two extremities.

Group 1 included patients in whom the arterial changes at the time of operation were thought to be spasmodic rather than obliterant as evidenced by the presence of palpable peripheral pulsation of the artery. Group 2 included cases in which an obliterant arteritis seemed to be the most important factor and no arterial pulsation in the affected extremities was noted. Group 3 included one case in which the cause of the pain could not be determined.

In three cases in Group 1 no improvement followed the operation.

In the second group of cases, one definite cure was obtained. This patient had an ulcerated gangrene of the dorsal surface of the middle toe of the left foot. Several weeks after the operation the gangrene

dis appeared and the sloughing healed into a resting scar.

In the one case of Group 3 operated upon for unaccounted for pain in the thumb the pain disappeared. H A McKEOWN M D

Tyler W J The Surgical Treatment of Chronic Sciatica. *A South J & Med Res* 9, 1911, 693

The surgical treatment of chronic sciatica described is based upon an article by Renton. Ninety nine cases have been treated in this manner with successful result in practically all. The operation is to be used only in true cases of sciatica and after medical treatment has been tried. If the sciatica is due to a lesion of the spine, sacrum, hip joint, or other structure, these conditions should be cured. In certain cases the pain is due to a perineuritis which often is combined with neuritis with adhesions binding the nerve to the surrounding tissues. It is this type of case upon which the author operates.

A classification of the cases based on the clinical condition is as follows: (1) cases in which pain occurs only during exercise; (2) cases in which there is some pain during rest and intense pain during exercise; (3) cases with indefinite and irregular pain either at rest or during exercise.

In cases of Type 1 in which the inflammation has subsided but adhesions are present the author operation should give a cure in 100 per cent.

The operation demands a free incision from the gluteal fold downward, exposing the nerve as far as the extent of the pain. The nerve is hooked up with the finger but not stretched. The adhesion surround-

ing it is carefully dissected away either with the scissors or a scalpel, or with grooves and the fingers. No nerve branches are cut. The nerve is then carefully returned to its bed, the muscles are adjusted in place, and the skin is sutured. The patient is kept in bed three weeks and discharged at the end of four.

The author reports nine cases. Eight are completely cured. The ninth, which is recently operated upon, is still in the convalescent stage.

MARCUS H. HOWART, M D

Semmer R. Cavernous Angiomas in the Peripheral Nervous System (Ueber ka. cavern. Angiome am peripheren Nervensystem). *Deutsche Zeitschr f Chir* 922, 1910, 65

Although cavernous angiomas are found frequently in the central nervous system, only two such neoplasms in the peripheral nerves have been reported. The author reports a case in which the tumor had its origin in the blood vessels of the posterior tibial nerve.

Angiocavernomata originating in the peripheral nervous system owe their origin to a malformation of tissue, viz. strangulation of an embryonic vascular branch in the endoneurium and perineurium. They are of interest only because of their situation. Pathologically anatomically they are ordinary angiocavernomata. Their rarity is due to the extraordinary regularity of the intracranial blood vessel formation which makes strangulation of the capillaries extremely difficult. The excision of these tumors is complicated by their intimate connection with the nerves, which usually must be resected. HENK (2)

MISCELLANEOUS

CLINICAL ENTITIES—GENERAL PHYSIOLOGICAL CONDITIONS

Glass, E. Tissue Necrosis Due to an Ink Pencil (Zur Tintennadel Gewebeskrebse). *Deutsche wochschr* 93, 1910, 383

In 9 Erdheim reported nineteen cases of tissue necrosis caused by ink pencils. In this article Glass reports two cases.

Case. Four weeks before he consulted Glass the patient had had a fall on the forearm. This was followed by swelling which did not recede. When an incision was made a violet fluid escaped. The incisional wound closed, but four weeks later protrusion as large as half a walnut developed on the forearm, there was considerable swelling of the surrounding tissues, and the patient's general condition became poor. Methyl violet was demonstrated in the bandage materials. The patient knew nothing of an injury from an ink pencil, but on examination of the wound a broken piece of such pencil as found in the necrotic cavity. The entire wound cavity was thoroughly excised. Uneventful healing resulted.

Case. In this case the broken-off piece of ink pencil was removed immediately but the injury caused necrosis of tissue, lymphangitis, and deterioration of the general health. Healing followed opening and débridement of the wound and the application of a 1 per cent alcoholic solution of trypanblau.

The injurious factor is believed to be the methyl violet. The tissue necrosis tends to spread. The effect upon the general health is striking. The process of healing is very slow. SCHWARTZ (2)

Von Balogh, E. A Contribution to Our Knowledge of Noma (Zur Kenntnis der Nomaelektione). *Wiener wochschr* 922, 1910, 74

The author gives a brief report of thirty-two cases of noma observed in the course of 100 postmortem examinations carried out during the past three years in the Department of Anatomy of the St. Ladislav and St. Gerhard Hospitals in Budapest. A high percentage of cases coming from the poor were those of undernourished children from poor families.

The majority of the subjects were under 15 years of age, but the disease was found also between the eight

cent and twenty fifth years. Twenty five of the subjects were girls. The localization of the condition was variable but it involved almost exclusively the large orifices of the body and the surrounding tissues. In fifteen cases it remained a completely isolated affection of the cheek. Abscesses was most often the primary disease (twenty two cases). Paronychia and infectious intestinal catarrh were occasional causes.

The striking feature in the histologic findings was due from thrombosis of the blood vessels and changes of varying degree ending, in the most severe cases, in advanced gangrene was the failure of a defensive reaction in the apparently intact adjacent tissues.

By use of the original bacterial flora from cases of noma (a mixed infection of spirochetes and fusiform bacilli) the authors succeeded in producing the changes in excised muscles which greatly resembled true noma. The presence of fusiform symbiosis suggests weakness of the cells brought about by the primary disease. *HOERNIA (Z)*

Paul, M. Observations on the Origin, Causation and Treatment of Rodent Ulcer. *Med J Australia*, 9: 85

While the etiology of rodent ulcer is still indefinite it is a significant fact that although the lesion may occur in any part of the body it usually appears on the face, more especially its central horizontal third. The sites of predilection are the eyelids especially the inner and outer canthi, and the nasofacial grooves. As this region of the face is also the site of predilection of nevoid growths of an embryonic nature it is possible that stimulation or irritation of such tissues may lead to the formation of rodent ulcer. Not only so but also the actinic ray of the sun may be factors in the production of retrograde changes.

Rodent ulcer may arise from the basal cell layer of the epidermis or the corresponding portion of the pilosebaceous structures as nevoid growth in which the germ or seed is present in the basal cell layer and lies dormant until acted upon by certain stimuli. It may develop also from immature pilosebaceous structures or from another nevoid growth such as mole. The acroplasmia vary in appearance depending on whether the cell rest is destined to form hair follicle, a sebaceous gland or a combination of these. When it is destined to form hair follicle, the growth is characterized by closely packed cells somewhat uniform and sharply circumscribed masses, devoid of a marginal palisade layer showing cells of spindle shape. Sebaceous gland structure is indicated clinically by large reddish masses (usually on the nose) and histologically by reticular arrangement. There is also a combination of the solid or budding type with reticular arrangement.

An acroplasmia may originate in the epithelium of pilosebaceous follicle or the basal portion of the surface epidermis as the result of traumatism or the effect of the actinic ray of the sun.

The treatment consists of irradiation with radium or the X-ray and excision. Radium is indicated in almost all cases and gives good results except where bone or cartilage is involved. Diathermy may also be of service but accomplishes little that cannot be achieved with radium. *H. W. IRVING, M.D.*

McConnell, G. A Case of Multiple Myeloma. *Law J Med Sci*, 9: 341-84

This case report is particularly interesting in that the multiple myelomata occurred in a patient presenting clinically a pseudo phlebotomy syndrome. Postmortem macroscopy seemed to prove the diagnosis of multiple myeloma although the patient, negro 50 years old, had stated that he had both chancre and gonorrhea thirty years previous. The aorta as dilated and calcareous; the papulae were irregular and unequal. It had reacted sluggishly to light, a slight tracheal tug had been noted. Soft areas were found in the tibia, clavicles, humeri, skull, cervical vertebrae, ribs, clavicles, scapulae, femora and thighbones enlarged.

No mention is made of the treatment of the chancre thirty years before but repeated blood Wassermann tests, one spinal Wassermann test, and the Lange colloidal gold test were negative. Bence Jones protein tests were repeatedly positive, thus adding weight to the differential value of this test in the presence of myelomata.

The external distribution of the tumors, which was typical and their characteristic absorption of lime salts from areas of the bones in old made it possible that the calcareous deposits in the elastic membrane of the aorta and large arteries, the lungs, spleen and pancreas resulted from derangement of the calcium metabolism due to the excess of calcium available from the absorbed areas.

The patient died eight months after the beginning of his disability. The urine had contained large amounts of albumin for some time previously. The kidneys contained calcareous deposits and were found sclerotic and fibrosed.

Microscopically the tumors showed two types of cells—one having round or oval nucleus staining deeply and surrounded by narrow pale granular cytoplasm and the other larger with larger nucleus, and surrounded by large amount of cytoplasm which appeared cloudy. Mixed with these cells were multilayered clear megakaryocytes and mononuclear cells with granular eosinophilic protoplasm.

DRIVER W. CARR, M.D.

Bierlich, R. The Function of Connective Tissue in the Experimental Production of Cancer (Ueber die Beteiligung des Bindegewebes bei der experimentellen Krebsbildung). *Arch f path Anat Physiol*, 9: 222-35.

The question whether arsenic, lactic acid, and the X-ray can initiate or cause an increase of definite pathological growths is considered in three experiments. For the purpose of this study experimental cancer produced by tar was chosen.

It was established that through the administration of arsenic, and later of a combination of arsenic and tar a distinct delay in the appearance of benign superficial growths of the epithelium (an average of eighty days) and of malignant deeper growths (an average of one hundred and thirty-one days) was brought about. Neither an increase in the virulence of the transplanted tumor nor an acceleration in the formation of the experimentally produced tumor resulted from the use of lactic acid.

The effect of the X-ray are the same as those appearing after arsenic and in the first stage of the cancer namely swelling of the epithelium, redemptions breaking down of the skin and subcutaneous tissue and, later, marked increase in the elastic fibers, especially in the papillary body. In contrast to changes caused by the irritants named, these occurred in a few minutes.

The increase of the elastic fibers is caused by a saturation of the indifferent fibers with elastin their regeneration in such a short period of time is precluded. This effect of the X-ray corresponds to the first stage of tar-nematode and X-ray cancer in which the elastic fibers are greatly increased in number as long as the epithelium has not grown into the connective tissue. In the second stage when this is the case, the elastic fibers are almost entirely absent. It may be assumed that solution of the elastin saturation is caused by the cancerous tissue.

Three stages may be recognized in the change in tumor resulting from the use of tar, the X-ray and arsenic. In the first there is an increase of certain epithelial functions. Accompanying this there is an increase in the formed elements of the connective tissue especially those adjoining the epithelium. This depends upon a physicochemical change in the protoplasm of the connective tissue. In the second stage diametrically opposite development takes place, namely breaking down of that as previously accomplished. The elastic fibers gradually shrink, the connective-tissue fibers are greatly twisted or are separated into thick cylinders. This also is caused by change in the physicochemical structure brought about by cancer.

The fact that irritants such as tar, the X-ray and perhaps arsenic, influence particularly both the epithelium and the connective tissue is a valuable addition to our knowledge of the development of experimental cancer. HUTCH (2)

Lang, F. J. and Krainz, W. Cystic Osteoplastic Carcinoma as Compared with the Scirrhus Form (Ueber das cystische osteoplastische Carcinom im Vergleich zu seiner verdichteten Form). *Fortschr. Zisch. f. Path.* 9, xxviii, 346.

This article reports in detail 2 cases of osteoplastic carcinoma of bone which was primary in the prostate. The first case showed the usual picture as described by von Recklinghausen. The portions of the skeleton which are most concerned in the mechanism of bodily movement, the vertebral column and the ribs, very marked changes were

found and there was preponderating bone absorption due to the irritation of the nests of carcinoma cells, proliferating in the marrow spaces. There was also congestion of the blood vessels of the bone. Bone destruction was present, but did not keep pace with the increased new bone formation.

The prostate belonging to the second case was lost in the confusion due to the war but the fact of its tumorous degeneration is certain. This case was remarkable in that cystic formations, arising greatly in size, were found in the interior of the involved bones, but especially under the periosteum. There were also subchondral cysts in the femoral heads. Microscopically the cavities consisted of dilated gland laminae in the neoplasm. The author explains these formations on the basis of the great activity of the carcinoma cells, such as tumors due to the plentiful blood supply, the patient being only 27 years old. In the same way he explains the chiefly subperiosteal and subchondral situation of the cysts. BROOK (2)

Klemperer, P.: Parathyroid Hyperplasia and Bone Destruction. I. Generalized Carcinomatosis. *Surg. Gynec. & Obst.* 6, 3, xxviii.

The patient, woman, 49 years of age, had been operated upon for carcinoma of the breast eighteen months previously, was admitted to the hospital complaining of considerable pain in the back and showing evidence of metastatic cancer throughout the entire skeleton. Examination of the blood revealed 2,00,000 red blood cells, 5,000 white cells, and a hemoglobin content of 8 per cent. Smear showed poikilocytes and normoblasts. The urinary findings were negative.

Autopsy revealed tumor metastases in the bones and spine and the crural and sternal bones. The left inferior parathyroid gland measured 30 by 5 by 3 mm. and was yellow firm and separate from the thyroid gland. Sections through the ribs showed extensive destruction of bone, its replacement by a large number of cancer cells, chiefly by the formation of Howship's lacunae. In other areas there was an extensive formation of osteoid and fibrous tissue.

The outstanding difference between this case and the usual type of bone known found in secondary cancer is the complete absence of calcification in the newly formed osteoid tissue. The author suggests the term osteomalacia carcinomatosa to describe the condition.

On section, the parathyroid tumor showed hyperplasia and like the parathyroids, cells of medium size with large nuclei and a narrow cytoplasmic zone. Sections through the pituitary gland showed destruction of the posterior lobe and the intermediate zone by tumor growth. The anterior lobe was intact. The author calls attention to the fact that the entire destruction of the posterior lobe did not cause any change in the output of urine.

Osteomalacia has been found associated with hyperplasia of the parathyroid glands, but the

extensive bone destruction in carcinomatous has not been considered heretofore in this connection. As in the case reported there was hyperplasia of the parathyroids and at the same time an entire lack of calcium deposit in the newly formed tissue, the author considers the hyperplasia of the parathyroid glands a fruitless attempt of the body to compensate for the calcium deficiency. In conclusion he states that the parathyroid glands should be examined in all cases of bone metastasis.

WILLIAM J. PROBERT, M.D.

BLOOD

Guthrie, C. G. and Huck, J. G. On the Existence of More Than Four Isoagglutinin Groups in Human Blood. *Bull Johns Hk Phys Hosp Balt* 9:3 1930 37

The authors briefly outline the history of the discovery of blood groups. Shattock is credited with being the first to recognize the grouping of blood. At first only three groups were identified. Landsteiner, in 1901, showed that blood grouping is dependent of health or disease and follows certain laws. In 1902 the fourth group was demonstrated by Decastello and Struli. Jansky in '00 and Mow, in 1909, also found the group to which Decastello and Struli referred. Mow, Minot and Brem, particularly have thrown light on blood grouping. It has been thought that any unknown blood could fall into one of four groups. In the thirteen years following Mow's report, the status of four blood groups has remained unchanged, no group having been added or subtracted.

The authors of this article had a case of so called sickle cell anemia under observation in which it became necessary to determine the blood group. Contradictory results were obtained. By the usual procedures the patient's blood was found to have reactions characteristic of both Group I and Group III, that is to say the cells behaved like those of Group III and the serum behaved like that of Group I. This persisted for three months without change and all of the reactions were clear cut.

The authors then investigated the patient's family. They are able to secure the blood of fifteen immediate relatives. Three other members of the family showed the same blood grouping as the patient.

Incidentally the so called sickle cells are found in several members of the family. Of those who exhibited the unusual blood grouping, it is shown that sickle cells and it did not. These unusual manifestations do not seem to be dependent on each other.

In the case of another patient whose blood did not conform to the usual requirements of the four groups the authors concluded after many trials with always consistent results, that the patient belonged to a sixth group.

At present, Guthrie and Huck state merely that the blood of the first patient belongs to Group III whose serum is devoid of Agglutinin B and that the

blood of the second patient belongs to a Group II whose red cell content is extra agglutino-gen.
S. I. ABRAHAM, M.D.

Tyler M. and Underhill, F. P. Does Menstruation Influence Blood Concentration? *Am J Obst Gynec* 9:3 5

The present method of estimating hemoglobin fails to show constant variation characteristic of any one phase of the menstrual cycle. During some periods the hemoglobin rises slightly but during others it falls. The change is not related to any symptom such as headache, with which rise in hemoglobin has been associated by some writers.

The uniformity of the hemoglobin percentage during menstruation might be predicted as the blood loss is certainly insufficient to cause measurable decrease. Recent studies during menstruation showed normal basal metabolism. F. type from measured work was as quickly overcome as at other times. The fact that there is no change in the hemoglobin content and therefore in the blood concentration during menstruation is in accord with our present knowledge regarding the physiology of this function.
E. L. CORWELL, M.D.

Lehrnbecher, A. The Theoretical Basis and Practical Application of Blood Pressure Estimations in Surgical Operations. (Die theoretische Grundlage und praktische Anwendung der Blutdruckmessung bei chirurgischen Eingriffen) *Beit Hk Chir* 9: 1930 30

Blood pressure estimations during an operation were recently urged by Koenig, Anschutz, and others. Lehrnbecher discusses his findings in 350 cases treated at the Nurnberg Hospital on the service of Burkhardt. He comes to the conclusion that determinations made before operation are of little practical value and that only in cases of pronounced internal hemorrhages does the method offer importance in the differential diagnosis.

Knowledge of the blood pressure during an operation helps in estimating the depth of the narcosis. A fall in the blood pressure during an operation is the earliest sign of collapse and shock.

A comparison between the figures obtained immediately after the operation with those obtained before is of little prognostic value. Of considerable greater significance is the reaction of the blood pressure during the evening of the day of operation and the next day compared with the determination made immediately after the operation. A considerable rise indicates good prognosis. A blood pressure which is lower the evening of the day of operation or the next day than that obtained immediately after the operation is unfavorable.

In cases of postoperative bleeding, blood pressure estimations are of the greatest value for the diagnosis and the evaluation of the therapeutic measures used. The efficiency of heart stimulants may also be gauged by blood pressure estimation. This

method is particularly useful in estimating the good analgesic effect of intravenous narcotics.

NAB-FIL (Z)

Nicolajsen, N. A. The Transfusion of Blood in Acute Posthaemorrhagic Anaemia (Leber Bluttransfusion bei akuter posthaemorrhagischer Anämie). *Md rev* 9 1315 30

The author reports four cases of citrated blood transfusion and one case of autogenous blood retransfusion (extra uterine pregnancy). In all of the cases there was severe posthaemorrhagic anaemia. In one thus as due to haemophilia. In the cases there was great danger to life and the transfusion seemed to save life though one patient died soon afterward from repetition of the terminal haemorrhage. In the three other cases also the anaemia was very severe but death not so direct imminent. In one of these an immediate effect as noticeable. In the second there was change in the entire course of the condition (haemophilia). In the third, the symptoms receded as less noticeable because of an overlooked agglutination of the red blood cells of the donor but the later effect on the regeneration of the blood as favorable. Only single test with the red blood cells of the donor (citrated serum suspension) and the serum of the recipient was made before the transfusion.

The best test was found to be microscopic examination upon the glass slide.

The citra was always exposed and punctured under distention so that the blood poured forth in streams and could be caught. Functions of the hollow needle is dangerous because of the formation of coagula. Thirty cubic centimeters of 3 per cent sodium citrate solution were placed in measuring glass into which 50 gm of blood was caught and immediately mixed, and then another 50 ccs of sodium-citrate solution were added. As coagula form easily along the edge the blood as filtered through several layers of gauze before it was injected. The donor was also given close relative of the patient. The donor experienced no unpleasant effect even when 1,000 ccs of blood were withdrawn.

For (C)

Siperstein, D. M. and Sarnely, J. M. Intraperitoneal Transfusion with Citrated Blood. An Experimental Study. *Am J Dis Child* 63 107 107

The intraperitoneal transfusion of citrated blood in rabbits is safe, simple, and efficient procedure. Absorption of blood takes place very rapidly in the peritoneal cavity of rabbits. A rabbit can absorb approximately one fifth of its own blood volume in four hours.

The intraperitoneal transfusion in both anemic and normal animals causes a sharp temporary rise in blood values during the absorption period. This is followed by a more permanent increase.

Studies at necropsy when considered with the blood counts, apparently indicate that the initial

rise is due to the absorption of red blood cells from the peritoneal cavity and not merely to concentration of the blood volume.

Pigeon's blood injected subcutaneously into rabbits apparently does not enter the general circulation in demonstrable amount. The same blood injected into the peritoneum is absorbed very rapidly.

The intraperitoneal transfusion of freshly citrated blood cells is a true transfusion, and not as the absorption of nutrient material.

The intraperitoneal route for blood transfusion is proposed as a therapeutic method of merit.

SARNEY, J. M.

BLOOD AND LYMPH VESSELS

Calzavara, D. Wounds of the Common Carotid (Ferita della carotide comune). *Arch Ital de chir* 9 4 433

The high mortality of wounds of the common carotid artery is due not only to the severe immediate haemorrhage but also to complications such as infection, secondary haemorrhage and the secondary severe cerebral lesions analogous to those following ligation of the carotid. The cerebral lesions are usually secondary to anoxic infarcts of the brain (compensatory circulation by way of the circle of Willis or retrograde circulation from the external carotid may develop. Late complications may be caused by thromboembolism. When clot forms in the artery at the point of injury it may be carried later to the cerebral vessels to lodge either at bifurcation or in the brain. The thoracic anastomoses of the circle of Willis. The anterior (3 per cent) or posterior (7 per cent) communication branch may be absent or the internal carotid may not communicate with the external. Some writers believe that the blood loss and lowering of the blood pressure are so great that blood cannot be forced through the circle of Willis, while others claim that arteriosclerosis interferes with collateral circulation. According to another theory the insult to the carotid wall causes spasm of its coats through stimulation of the "constrictors," which arrests off the blood supply long enough to cause cerebral anoxia before the collateral circulation can develop. This time may be but a few minutes.

Experimental work on dogs and cats has not thrown much light on the subject with regard to man.

The author reports the case of man 33 years old who was shot in the neck, the bullet lodging beneath the skin of the neck. There was no temporal pulse on the left side. On the right side hemiplegia developed. At operation the bullet was extracted and the carotid as exposed. The internal jugular and aorta were intact. Part of the carotid wall had been carried away and the proximal end of the artery as occluded by clot. The clot as disturbed and the wound was closed as pulsation began. Death occurred at the end of twenty hours.

At autopsy clot as found in the peripheral end of the common carotid, extending to the bifurca-

tion. The external and internal carotid, anterior and middle cerebral, and circle of Willis were patent and of normal caliber. There was no sclerosis. An anemic infarct of the brain and an increased amount of ventricular fluid were present. The author's opinion on the anemia was caused by persistent spasticity of the arterial walls. Immediate operation is indicated after such injury to insure surgical hemostasis instead of insecure spontaneous plugging of the vessels. The arterial spasm may thus be relieved.

KILLOGG SPEED M.D.

Ticky H. A Case of Arteriovenous Aneurism of the Subclavian Artery with Reversal of the Circulation of the Arm. A Contribution to the Functional Transformation of Blood Vessels (Ein Fall von Aneurysma arterio-venosum der Subclavia mit Umkehr des Arterienlaufes. Ein Beitrag zur funktionellen Gefäßumbildung). *Zentralbl. f. Chir.* 93, xix, 50.

A former infantryman, 6 years old, as injured in the left shoulder, in 95 by a bullet. An aneurism of the clavicular blood vessels resulted. The radial pulse disappeared. There was an exceptionally marked development of varices on the anterior surface of the left side of the chest on the left upper arm, which was much enlarged, and half way down the forearm. The pulse was palpable in the of the varicose strands (those representing the cephalic and the basilic veins).

In 192 a sudden aggravation of the condition made amputation of the arm necessary. At that time, the varix representing the cephalic vein was widely gaping and bloodless, and presented rigid thick walls. The same was true of the basilic vein, which, by its position, represented the brachial vein. Another varix, representing the basilic vein, was thrombotic above. The brachial artery was collapsed thin-walled, and full of blood. The histologic findings in the wall of the vein were as follows:

The intima was very considerably thickened. The muscle bundles in the media were separated from one another by richly developed connective tissue. There were no muscle fibers in the externa. While the media did not contain many elastic fibers, the hypertrophic intima showed very dense network. An internal layer of elastic fibers was distinctly recognizable.

ZILLNER (Z).

Muehler W. The Treatment of Defects of the Walls of Blood Vessels by the Application of Rubber Protective Coverings (Zur Behandlung von Gefäßwanddefekten mittels ofgeklebter Gummischutzkleiden). *Zentralbl. f. Chir.* 93, xix, 87.

The author discusses Moccys suggestion for the repair of defects in the walls of blood vessels.

In large and not too broad defects hemostasis can be obtained by the application of rubber covering when suturing is impossible. This procedure may prove to be better than ligation because the occlusion of the blood vessel occurs slowly so that time is

gained for the development of a collateral circulation and necrosis of tissue is prevented. Attempts to obtain agglutination by means of rubber solutions are to be discontinued. A suitable wide soft rubber tube, split lengthwise, applied round the vessel and held together by loose coils of thread laid around it after the fashion of barrel staves accomplishes the purpose more easily and surely.

KALIN (Z).

GENERAL BACTERIAL INFECTIONS

Miller R. H. Tetanus. A Report of 116 Cases at the Massachusetts General Hospital. *Surg. Gynec. & Obst.* 93, xix, 90.

One investigator noted that tetanus often occurs only after the wound is dry and healing is well advanced. Another classifies cases of tetanus into three groups: (1) cases due to puncture wounds, (2) those due to cold or freezing, and (3) tetanus of the newborn.

Miller classifies the cases into two types viz. tetanus ascendens or local tetanus, and tetanus descendens or general tetanus. In tetanus ascendens, the toxin, making its way directly to the cord, first involves the muscles of the wounded extremity this being followed in some cases by general symptoms before death occurs. In tetanus descendens which is by far the more common form, the involvement of the central nervous system causes, first, symptoms in the muscles of the jaw and neck, and then more or less extensive involvement of the rest of the body.

A preventive injection should be given in every case of injury however slight in which there is reason to fear tetanus. This applies chiefly to dirty puncture wounds of the feet or hands, severe lacerating wounds of any part of the body, and especially compound fractures.

Since 87-116 cases of tetanus have been treated in the Massachusetts General Hospital. The total mortality was 60.9 per cent. Anesthetics was first used in 896. Previous to 896 the statistics included twenty cases, in which the mortality was 80 per cent. This demonstrates that a certain number of cases of tetanus will end in recovery even if they are not given specific treatment. Since 896 there have been ninety-seven cases with mortality of 67.7 per cent. This slight decrease in the mortality the author believes is due to more intensive and intelligent administration of toxins.

Of the last five cases under his observation, three recovered. The first was that of a school girl, 6 years of age who was admitted to the hospital with puncture wound of the foot. Treatment according to the symptoms caused the disappearance of signs of tetanus in seven days but the patient died of bronchopneumonia.

The second case was that of a man 44 years of age who was admitted to the hospital with lacerated infected wound over the right tibial tubercle due to the kick of a horse. This was the first case

In which luminal as used. It had no untoward effect and proved of value.

The third case is that of a child 4 years of age who had infected numerous mosquito bites by scratching. It was not a very severe case and the patient recovered after the administration of 55,000 units of titoxin.

The fourth case was that of a girl 7 years of age who had a puncture wound of the foot due to a nail. The wound was treated in the routine manner and a titoxin and luminal were given. This was a very severe case and, in the author's opinion, was saved by the treatment.

The fifth case was that of another girl 7 years old who had an infected wound of the upper arm. This was a severe case and seemed almost hopeless from the beginning. In spite of treatment the patient died.

The author concludes as follows:

1. Prophylactic injection of titoxin should be given in every case in which there is the slightest possibility of the development of tetanus.

2. Ligation and debridement of the wound is the first essential. The wound must be kept open.

3. The use of magnesium sulphate and carbolic acid is of doubtful value.

4. Sedatives must be used as indicated. Luminal is a valuable drug.

5. A titoxin should be given in large doses by the intraspinal and intravenous routes and in small doses into the tissues around the wound.

GEORGE E. BURLAY, M.D.

SURGICAL DIAGNOSIS, PATHOLOGY AND THERAPEUTICS

Clark, A. J. The Scientific Basis for Non-Specific Protein Therapy. *Brit. Med. J.* 9:3:35

Clark reminds us of the increasing number of clinical cases greatly benefited by the judicious use of foreign proteins or the products of protein breakdown. These clinical successes developed largely in America and Germany have forced the attention of clinicians who for the most part were previously biased by the belief that, to be of value, such therapy must be of a specific nature. This article attempts to summarize the present status of scientific evidence regarding the nature of the effects of foreign protein therapy.

Intravenous administration, when properly controlled, has been found a rapid and very effective method. It is indicated in acute infections such as typhoid fever in which the foreign protein often causes termination of the fever by crisis, and also in chronic infections such as arthritis, gonorrhea, and anthrax. The reaction is more severe when the agent is given intravenously.

The febrile reaction is essentially the same whatever agent is employed. Sterile milk, purified casein, normal serum, purified proteoses, or peptones may be utilized. Bier believes that any agent causing the breakdown of body proteins will give therapeutic

result similar to the results of foreign protein injections. Accordingly radium, the X-ray and the caustery give rise to the same febrile reactions by destroying tissue cells.

It appears probable that the common active principle in the protein reaction is a product of protein decomposition. The reaction is characterized by rise in the temperature associated with an increase in nitrogen metabolism, contraction of the smooth muscles, increased glandular secretion, and increased permeability of the capillaries.

An excess of protein decomposition products is violently toxic. Hence the necessity of carefully controlling the dosage of the protein employed.

Perhaps the most important effect of protein therapy is the increased permeability of the capillaries, especially those of the liver and the skin. A direct result of this there is an increased flow of lymph which washes the products of cell metabolism into the blood stream.

The chief blood changes consist of an immediate leucopenia followed by leucocytosis and an increase in fibrinogen, globulin, thrombokinase, and blood sugar. The proteolytic ferments become definitely more numerous. The antibodies are also increased. The bulk of evidence indicates that non-specific protein therapy results in the washing of cell and tissue fluids into the blood stream causing definite changes in the composition of the blood. Which of these changes is directly responsible for the beneficial clinical results is still unknown.

JOHN W. SCOTT, M.D.

Willebrand. The Histologic Processes Occurring in Skin Implanted by the Brauer Method (Leber der histologischen Vorgänge bei Hautimplantation nach W. Braun). *Arch. f. klin. Chir.* 9:2:45

The author investigated the histologic processes in the skin grafting method of Brauer, according to which pieces of skin, to 4 sq. cm. in size, are sunk obliquely into the depth of the granulation tissue. The implanted pieces of skin were removed after one, five, seven, eight, fourteen, twenty-one, thirty-six, fifty-one days, and six months, and examined in serial sections. Special attention was paid to the behavior of the implant (epidermis, the transplanted tissue of the cutis, especially the elastic fibers) and of the stroma (blood vessels, elastic fibers, connective tissue and granulation tissue) the healing, and the clinical results.

The implant and the stroma showed direct agglutination. There was no vidual or fibrin layer. As rule signs of inflammation, marked filling of the blood vessels of the stroma, and diaporesis of polymorphous leucocytes were noted as result of the foreign body irritation. After forty-eight hours the derivatives of the connective tissue cells and the vascular endothelia equalled the round cells in number. The injuries to the epithelium due to the cutting, the effect of air drying and squeezing were of short duration as after twenty-four hours progressive changes (mitotic figures) were already

recognizable. After forty-eight hours, conical proliferations of epithelium and a new formation of epithelial cells were visible.

The regeneration of the epidermis began in the cells of the tratum cylindricum and tratum spinosum. The adnexa of the skin (glands, sheaths of the hair roots) did not play any part. As the growth of the epidermis progressed, the graft canal assumed the epithelium which then spread over the surface of the granulations. Sections of the transplanted cuts were destroyed and the replacement occurred from the viable implanted connective tissue elements and from the stroma. From the eighth day the border between the substratum and the implanted skin became indistinct. The connection with the circulation occurred through vascular sprouts from the stroma. Degenerative changes appeared early in the elastic fibers. The new fibers originated at the edge from the fibers of the stroma.

The skin grafting was done thirty times. The tendency to shrinkage was slight. The possibility of moving the graft on the substratum was limited in the beginning but improved after eight to ten weeks. Sensibility was always reduced, but the sense of pressure was usually maintained. The final result was always a resistant, lasting skin. Epithelial cells were not observed. FRANKENHEIM (Z)

ROENTGENOLOGY AND RADIUM THERAPY

Wortman, R. Deep X Ray Therapy. *Am J Roent*
genol. 9, 3, 9.

Deep roentgen therapy is primarily a matter of roentgen ray dosage since it is definitely proved that under certain well defined conditions an abnormal cell is killed by an exposure to the roentgen ray that is insufficient to destroy normal cells. In estimating dosage, both primary and secondary radiation including scattered primary rays, must be taken into consideration. For accuracy of measurement of the primary radiation it is essential that homogeneous rays be used as all the factors concerning these rays be carefully worked out. Secondary radiation is more difficult to measure accurately, but it is known that at any given depth it increases directly in proportion to the hardness of the tube and the size of the field irradiated. The charts prepared by Desautel are of inestimable value as they make it possible to adopt a technique which will give an even irradiation of any lesion of moderate size at any of the usual depths.

Seris and Wintz of Erlangen have evolved a method that may be justly described as the first complete system of roentgen therapy having sound physical and biological basis. As a basis of dosage they use the unit skin dose. Working under their prescribed conditions, which are easily reproducible with the equipment they have evolved, this dose gives rise after about five days, to slight hyperemia which gradually subsides, leaving the skin undamaged though pigmented or tanned. Taking this unit skin dose as 100 per cent the limit of tolerance is as

follows: muscle, 180 per cent; intestine, 35 per cent; ovary, 35 per cent; tuberculosis, 50 per cent; sarcoma, 60 to 70 per cent; and carcinoma, 90 to 120 per cent. Forty per cent stimulates, 60 to 90 per cent paralyzes.

Measurement is carried out by means of the sentometer or with Kienboeck's strips. The dosage is controlled by time alone when once the activity of the tube has been ascertained.

Certain factors have an important bearing on the probability of a successful result from irradiation. If the patient's general health is practically unimpaired and if the lesion is localized in a relatively small area and without widespread local extensions, if every part of the growth is accurately evenly and thoroughly irradiated, and if the general health is carefully looked after during the subsequent weeks, it may be laid down as a general principle that the abnormal growth will disappear.

In the technique certain difficulties are encountered in practical work. If possible no skin area or other normal structure should receive more than the unit skin dose. Overdoses and also normal doses repeated three or four times bring about an obstinate local order. These hard rays seem to have a special effect on the local lymphatic circulation. Loss of radiation between the surface and the lesion beneath by dispersion and absorption must be compensated. Superficial conditions are easy to deal with. If only the skin is involved, even irradiation may be obtained by long focal skin distance, the time being increased as the square of the distance. Central lesions are probably the easiest to treat with accuracy. The depth having been ascertained and the percent given from each point of entry being known, the lesion is attacked from as many points as necessary to build up the desired dose. The difficult cases are those with superficial lesions in which there is limitation practically to one point of entry and those in which the lesion is situated in parts of the body having an irregular contour such as the jaws, the neck, the female breast, the vulva, and the anus. In this class of cases the difficulty has been partly overcome by covering the lesion with some material having the same absorption and secondary radiation value as normal tissues so as to make it central lesion. Water, paraffin wax, bees wax, and dough made from ordinary flour are all suitable.

In conclusion, by way of encouragement, the author briefly reports several cases he has recently treated with encouraging results. One was an inoperable carcinoma of the breast which the improvement was so great that surgical operation was given up indefinitely. A case of cancer of the esophagus with practically complete obstruction as relieved of the obstruction and the patient regained his normal weight. A case of carcinoma of the pancreas as symptomatically cured and has remained so for eleven months. A case of cancer of the prostate was sufficiently improved to render catheterization unnecessary and the patient is well.

and enjoying life. A patient with a rather hopeless sarcoma of the lung shows retrograde changes and appears to be in perfect health.

ADOLPH HARTUNG, M.D.

Wintz, H. Injuries from Roentgen Ray. In *Deep Therapy*. Am J Roentgenol 1933, 3, 140.

Aside from injuries attributable to careless or unskilled handling of the roentgen apparatus and overdosage certain dangers are inherent in the agent itself when it is used, at present, in deep therapy. These are divided into two groups, local and general.

In the first group are injuries caused by exceeding the limit of tolerance of the tissues and resulting from the defects of our present radiation technique. To give sufficient radiation to deep-seated lesions cross firing is necessary and regardless of an other wise exact technique certain structures in the line of the rays may receive an overdose because of summation, this resulting in edema or ulceration. Thus parts of the mucosa of the intestines or the urinary bladder may be affected when treatment is given for uterine cancer, or parts of the larynx or trachea may be injured when adjacent parts are irradiated. These injuries may be due to direct overdose or result secondarily from vascular injuries.

Another factor responsible for injuries is the addition of a radiation intensifying device from unknown secondary radiations whereby the radiation dose is increased though the primary radiation was correctly gauged and did not exceed the limit of tolerance of the tissues. Retained opaque meals, fecal masses, and collargol injected into the primary tract may act in this manner.

Lowered resistance of irradiated tissues to injury may be another cause of local injury and probably explains the so-called late injuries. If the effect of the roentgen ray upon the cells another irritant is added which normally would cause no injury at all, the skin will respond to the summation of the two irritants with a distinctly recognizable reaction. Factors that may incite such a reaction are persistent pressure upon the irradiated part of the skin, the application of ice bags or hot compresses and chemical changes produced by the administration of internal remedies. Severe trauma of irradiated parts of the skin may cause serious injuries such as necrosis.

If the same dose is repeatedly employed in the same part of the body the total of the macroscopically demonstrable injuries will produce peculiar picture, namely roentgen raduration. The skin is irradiated with a dose of 100 per cent of unit skin dose two times, or at the most, three times, at intervals of from six to ten weeks, becomes leathery and thick, feels tough and hard, and presents an edematous appearance. The cause of these changes is atonic appearance. The cause of these changes is undoubtedly to be found in vascular injuries and the increased permeability of the vessels. The other tissues, including the muscles and the connective tissues, will react in a similar manner. The power of resistance of tissue thus injured toward further

additional injuries, such as traumatic or chemical noxae or infection, is considerably lowered. If during the period of the infiltration (ulceration) the skin is protected against all injurious influences, the condition will recede in from one to one and a half years.

Far more dangerous is the infiltration of the pulmonary tissue which may appear after irradiation of mammary carcinomas or lung tumors. The findings in such lung resemble those of a central pneumonia. Fever is absent but there is slight irritative cough. The affected part of the lung is, of course, useless. This condition is also comparatively harmless and will recede spontaneously in the course of one-half to three fourths of a year. If an intercurrent disease (pneumonia or bronchitis) complicates the radiation infiltration the prognosis is almost always poor.

A greatly increased reaction is to be noted whenever a gross change in the tissue because the roentgen treatment introduces an additional noxious agent. This increased reaction may be observed even when the skin is only slightly irritated. Attention should also be given to the inflammatory reaction of the tissue following radiation of the ovaries in cases of decreased uterine activity. The reaction will be increased also if the cells are not widely changed and when a systemic disease exists as a injurious influence upon the cell.

In addition to the local injuries enumerated, deep roentgen therapy may produce certain general or systemic injuries on the operator as well as the patient. These include blood injuries and those due to inhalation of the air of the roentgen room and surgery.

Such can be avoided only by special devices. Acute blood injuries result from acute destruction of the blood corpuscles. They follow long-continued irradiation and are observed only in the patient. Chronic blood injuries due to the effect of the roentgen rays as well as the roentgen operator occur in the personnel of the X-ray room.

Destructive changes in the blood occur during each therapeutic irradiation for the destruction of pathologic cells. Their amount is directly proportional to the quantity of rays introduced and can usually be overcome if the patient's vital capacity is not too low.

The injuries caused by irradiation include also the so-called roentgen hater or roentgen asthma position. Changes in the biochemistry of the cells are produced by the roentgen ray through injury of the cell lipoids.

The general injuries occurring in persons using the X-ray are principally chronic blood changes consisting of rather high percentage of eosinophilic leucocytes (1 to 5 per cent) and leucocytosis (1000 to 4000) which appear after long continued X-ray work. The injurious agents are found chiefly in the air which has been treated by the electrical surges and particularly by the ozone formed from the air by the roentgen ray.

Many of the dangers inherent in deep roentgen therapy cannot be avoided even by the best technical and medical construction of the apparatus and

the most thorough instruction of the technical and medical personnel. Others may be obviated if their existence is recognized and proper measures are taken. The knowledge of the therapeutic value of modern deep roentgen therapy will stimulate systematic and correct investigation to avoid dangers and thereby contribute to the success of deep roentgen therapy.

ANOLINE HARTUNG, M.D.

Halberstaedter L. Roentgen Carcinoma (Ueber das Roentgenkarzinom) *Ztschr. f. Krebsforsch.* 9, 113, 5

The author differentiates between two types of roentgen carcinomata: (1) those occurring as occasional lesions from the professional use of the X-ray in which the influence of the rays is produced over a long period of time though in hardly measurable amounts; and (2) those resulting directly from investigations or treatment with the X-ray. The course of both is similar: drying of the skin due to the function disturbing or destructive effect of the X-rays upon the sebaceous and sweat glands, the formation of rhagades, hyperemic reddening, the development of pigment, the formation of hornlike accretions (hyperkeratosis) and vascular dilatation. The disease may become treated in an acute or more severe changes may gradually set in without further exposure to irradiation. Hyperkeratosis especially tends to carcinomatous degeneration. Chronic superficial ulcerations follow comparatively trifling injuries. The regional glands are attacked relatively late. The histologic picture is that of cornified squamous cell epithelioma.

Tumor formation may result from the influence of the X-rays also in skin which was previously abnormal, as in lupus vulgaris, less often in lupus erythematosus, and occasionally in psoriasis.

Besides carcinoma, sarcoma may ensue. Experimentally this can be shown in the rat.

Disease conditions of the skin resembling the conditions caused by X-ray degeneration are zerothema pigmentosum (Kaposi) and seaman's skin (Urtica). Roentgen skin (X-ray skin) xeroderma pigmentosum, and seaman's skin have this in common, that they develop as result of physical stimulation associated with radiations of short wave length. The appearance of pathologic changes is a question of dosage and hypersensitiveness.

The course of all three diseases extends over periods of years. Pre-eminent among the symptoms are the pathologic changes mentioned. In Orth's opinion these should be considered precarcinomatous. X-ray cancer is to some extent an involuntarily produced experimental cancer and exhibits striking parallelism to the cancer produced in mice and rabbits by tar.

SILVERBERG (Z)

Webster, J. H. D. The Clinical Results of the Treatment of Malignant Diseases by the X Rays. *Lancet* Oct. 373

As different cases radiation treatment is used as a prophylactic, palliative, or a curative

agent, the results of each should form separate statistical groups. Cases treated by prophylactic radiation in collaboration with the surgeon should constitute distinct groups subdivided according to whether the radiation is given before the operation or after or both. Also the results of palliative radiation after many incomplete operations or in inoperable cases (and, perhaps, the majority of cases at present referred to the radiologist are in this group) should be considered separately. In only a small proportion of the cases referred for radiotherapy can an attempt be made to arrive at definite cure.

Of the cases in which curative radiation is given the majority are cases of superficial epithelioma of the basal cell type. The cosmetic results of roentgen ray or radium treatment are better than those of surgical measures and the percentages of clinical cure are as high or higher. The chief causes of failure are inadequate or wrong methods of application. The results in cases of squamous cell epithelioma are not as good as those in cases of basal cell epithelioma because the former there is frequently an early wide invasion and the lesion is of more persistent type requiring more intense doses. The tongue is most unfavorable site for any form of treatment but clinical cures obtained by radiation, especially by methods of radium implantation, are recorded. When the roentgen ray is used, cases often fail to react to massive doses and improve when given repeated fractional doses administered within periods of month or two to the most.

The treatment of breast cancer is one of the fields in which radiation may be expected to be of the greatest service in reducing the mortality or prolonging life beyond the average duration of two and one-half to three and one-half years. In this condition also the results should be grouped according to whether the treatment was given for prophylaxis, palliation, or cure. The best results published so far appear to be those of surgery and radiation combined. Poor results may be attributed largely to faulty methods or technique. In about 50 breast cases radiated in the past year the author has seen very few recurrences while a course of roentgen radiation was in progress. A considerable number of the patients coming for treatment have shown regression, at least temporarily. About five cases of recurrence in whom has been treated but the results so far are inconclusive. In two operable cases of primary cancer of the breast one treated with the roentgen ray and the other with radium, the growth practically disappeared. Palliative radiation has a wide field, sometimes resulting in operability or relieving the pain, ulceration, etc. or delaying further extension and the merit be same. In cases with ulceration the best results were obtained when x-ray or other ionization preceded the radiation.

In cases of metastastical growths few clinical cures have been obtained, and a large number show temporary benefit. Testicular tumors are of great interest of five cases at present under observation for extension into the lumbar glands or recurrence

after removal of the testicles, several responded satisfactorily.

With regard to malignant gynecological conditions there is a wide range of opinion as to the relative value of operation and radiation. Some European clinics report a high percentage of clinical cures from radiotherapy in both operable and inoperable cases but insufficient time has yet elapsed to determine the permanency of such cures. Certain facts suggest that combined surgical and radiation technique as in breast cases, may give better results than either operation or radiation alone. Inoperable cases have frequently been rendered operable by radium treatment. Like testicular growths, ovarian neoplasms are often very radiosensit and pelvic masses in some cases regress quickly relieving pressure or other symptoms. A number of cases of uterine carcinoma obtained by radium and by the roentgen ray have been reported.

Gastric cancer was the first cancer to be treated by the roentgen ray but it probably be one of the last to yield to radiation or any other form of treatment. Compared with gynecological cancer cancer of the stomach occupies most unfavorable situation surrounded as it is by vitally important glands and other structures. Radiation is regarded as inadvisable after partial gastrectomy but in a few cases so tried have been reported. Primary cases with not very marked cachexia should be given the chance of roentgen ray treatment as in some instances extraordinary results have been obtained by this procedure. Cancer of the colon sometimes reacts well, with or without resection or colostomy. Each case must be treated according to its particular requirements. Usually both surgery and radiation are indicated.

As regards sarcoma other than uterine sarcoma, the author believes that the conclusions of Peirthe and Juengling may be generally accepted. These are as follows:

1. In all cases of inoperable sarcoma even large gliosarcomata of the brain, the roentgen ray should be tried. The remarkable results in hemophyseal tumors are noteworthy.

2. Lymphosarcomata should be radiated rather than operated on, as they react well to radiation.

3. Periosteal sarcomata of the pelvis, boulder or lamb joints better result are obtained with radiation than with operation.

4. Myelogenous sarcoma sometimes regresses without any treatment. The results of resection are good, but if amputation is considered radiation should be tried first.

5. Mammary sarcomata, if operable should be resected, they are difficult to radiate satisfactorily and all the early recorded cases were underdone.

6. Skin sarcomata should first be radiated. If refractory to radiation, they should be excised.

The results of radiation on a tumor which reacts well may be (1) complete disappearance by absorption of the degenerated tumor cells, (2) lessening of the size of the tumor but persistence of residue

usually firm proliferative connective tissue (in some cases it may be advisable if possible to remove this by operation, but if not, it should be watched for many years for signs of renewed activity) or (3) reduction to a certain degree and then no further change, the tumor appearing biologically dead.

A rapid increase in size and generalization are sometimes observed in cases underdone or refractory or in which the neoplasm is already too widespread, and as septic malignant tumors sometimes slough rapidly after heavy radiation, fractional dosage methods are advisable if the case seems still suitable for treatment. Local results, apart from those in the tumor are usually temporary such as those in the skin and the salivary and intestinal gland.

Undesirable general results from radiation are usually seen in the blood, the intestines, or the ductless glands. In considerable series of cases not as much blood changes as was found had been expected and there was no trouble with bowel sequelae. In one stomach case there was light but definite adrenal insufficiency for about 1 month, although only one adrenal received considerable dose. Temporary general effects of radiation such as rhegmic sickness, are reduced in intensity by careful previous preparation of the patient.

It is the author's belief that cautious progressive treatment of opinion is represented by the conclusions of Schminck and Hoffelder which are as follows:

1. With few exceptions, every operable carcinoma should be operated on. Prophylactic postoperative radiation should be given also.

2. In addition to postoperative radiation, simple intensive radiation before operation is important.

3. Practically all inoperable carcinomata and all inoperable recurrences should be radiated. In many cases this gives a clinical cure in others it results in operability and in many is a decrease of the bleeding, irritation, and pain, and limitation of further metastases.

4. Facial carcinomata even when operable may be treated exclusively by radiation for cosmetic reasons.

5. As a rule, sarcomata should only be radiated certainly in all cases in which operation would cause considerable mutilation. An increase in the size of the tumor after an efficient radiation should not be considered proof of failure to respond as usually it is temporary.

6. In the treatment of malignant tumors the roentgen ray has become superior to radium.

7. The relative values of operation and radiation cannot yet be shown by comparative statistics.

Radiation treatment is in rapid process of evolution. Lines of advance are indicated as regards technique, studies of the physical and histologic side of biological radiation effects and auxiliary therapeutic measures such as diathermy, ionization, etc. The author holds the view that whatever may be the ultimate value of radiation treatment used alone or as combined method, the curative action of the

roentgen ray and radium is the first rational therapy of cancer ever devised from the point of view of humanity because in its mode of action radiation calls on the body's forces to accomplish the cure.

ABRAHAM HARTUNG, M.D.

LEGAL MEDICINE

Responsibility for Payment of Physician in Accident Case. *Fruin vs. Glassnap*, 7 *Atlantic Rep.* p. 347.

In this case there was a conflict of evidence between the physician and one whom he sought to charge for services rendered. A child was injured by a truck driven by Glassnap and carried by third person into the office of Dr. Fruin. The physician immediately administered first aid and on examination discovered that the child was seriously injured and would have to be confined in a hospital for eight or ten weeks. According to Fruin, Glassnap came to his office soon afterwards and on being told of these facts and that there would be a charge for treatment of the child, answered that he wanted Fruin to take the case and paid \$500 for the expense of roentgenogram. Glassnap denied that he had any conversation whatever with the physician concerning payment for services rendered or to be rendered and stated that he paid no money.

The jury found in favor of the physician but it was claimed that error was committed by the trial court. The Supreme Court said: "This defendant (Glassnap) asserts that he stood in the position of a stranger who simply calls on a physician to care for him because of sudden injury, is unable to act for himself and to whom the stranger holds no relationship which creates an obligation to furnish proper medical care. If the conditions in which these parties stood, the burden rested on the plaintiff (the physician) to prove either an express promise by the defendant to pay the plaintiff for his services or circumstances or language from which his promise to pay might fairly be implied from the request he made."

From the evidence relating to the conversation between the parties and the time and circumstances in which it took place and also to the payment of \$500 on account, it might reasonably be found either that the defendant made an express promise to employ and pay the plaintiff for his services or that he made request of the plaintiff for his services which implied promise to pay for them. As to the difference between these alternatives, the court did not sufficiently instruct the jury. It did not define an express promise, an implied promise. The judgment as accordingly set aside and new trial ordered.

WILLIAM F. MOONEY

GYNECOLOGY

UTERUS

Kross, I. Uterine Secretion. An Experimental Investigation of Its Effect upon the Coagulation of the Blood. *Surg. Gynec. & Obst.* 9:3, 17.

One of the important problems confronting the gynecologist is that of so-called essential uterine hemorrhage. It is quite obvious that before we can explain the pathologic condition we must first know the cause and the mechanism of normal menstruation. In the latter phenomenon the most striking feature is the fact that the hemorrhage runs a strictly limited course in spite of the apparent lability of the menstrual blood. Schukle showed that uterine extract retards the coagulation of the blood. Dorst holds that the factor responsible for the non-coagulability of menstrual blood is the antithrombin formed by the uterine mucosa. He explains, prevents clotting by neutralizing the action of the fibrin ferment. I have bleeding he describes it an excess of antithrombin. As far back as 1899 Flood showed that in animals the uterine extract retards coagulation.

In a series of preliminary experiments the author attempted to investigate the effect of saline and distilled water extracts of human uterine mucosa but his results were inconsistent and contradictory probably because his extracts contained other uterine juices and blood.

In his animal experiments eighteen young female rats were used. The uterus was exposed by a supra-pubic median incision. In half of the animals the ligament was then tied below the bifurcation and in the other half placed round one horn just below the bifurcation. The animal was then examined to determine if one of three results by other paratomies. In the successful cases marked distention of the ligated portion of the uterus due to clear opalescent fluid was found. This fluid was removed by means of a fine aspirating needle and tested against blood removed from the heart of the same animal or another of the same breed.

Later in the series of experiments the secretion from the uterus of the rat was heaped against guinea pig blood cells and human blood. The results obtained were the same. In all of the experiments the uterine extract delayed the coagulation of the blood by from 10 to 18 minutes and when the clots were incubated with it they usually redissolved entirely.

Taken in conjunction with the findings of White, Moore, H. H. Frank, and others, the results of these experiments justify the theory that the cause of abnormal bleeding which cannot be accounted for on anatomical grounds (as the presence of a neo-

plasm, etc.) is due to a lesion from the normal in the secretion formed by the uterine mucosa.

C. D. HARRIS, M. D.

Tenckhoff, B. T. Ventrofixation of the Uterus and Its Complications. *Heute (Zur Frage der Ventrofixation und ihrer Complicationen. Dr.)* *Arch. f. Gyn. & Obst.* 9: 411, 1910.

The few writers on the indications and the method of operation are still widely divergent. In regard to the indication Vorschuetz agrees in general with Kuestner. He describes an important part of all disturbances retroflexion. Such is the first stage of prolapse and which he believes should be treated at the time of maturity. The Alexander operation is discontinued. If an operation is done the cavity of the lower pelvis should also be exposed to view.

The incision generally used by the author is the Pfannenstiel incision of Kuestner. The Pfannenstiel incision cannot be extended when necessary. If suprapubic is feared, the median incision is employed. A hysterectomy and hysterectomy slightly disturbed labor like the Oshagen operation they are possible only after the hysterectomy or when simultaneous hysterectomy is to be done.

Heu is serious to get T cases due to fixation of the promontory have been reported by Oblecker three by Berg and others by Haastrup. This condition arises from strangulation of a coil of intestine in the extra-uterine space usually at the side of the loosely hanging round ligament. The symptoms are produced by traction on the peritoneum. Recurrences are frequent, especially after the Alexander Adams operation.

The Dole's Gallium operation avoids all these complications. In this procedure the round ligament is grasped about 1.5 cm from its insertion in the uterus and after the formation of a puncture canal through the rectus abdominis is fixed to the anterior sheath of the rectus abdominis. The lateral portion then passes to the inguinal canal as the round ligament goes to the iliofemoral wall that no intestinal coil can slip through it. The dangerous shift is avoided. The sutures in the ligament are buried by duplication of the fasci.

This operation done 53 times T cases of them were found among 117 women examined subsequently. In these the uterus was partially adherent to the large intestine in the cul de sac of Douglas had used the large uterus with it forming a knot. In order to avoid such an occurrence the uterus must be freed from adhesions. There is partial recurrence in only one case. In this instance laparotomy showed that the ligament was stretched

ent into a thin peritoneal thread. Disturbances of labor were never observed. Two women died from pneumonia. Respiratory exercises and in febrile cases, the administration of 2 gm. of optochin six times in addition to autogenous blood transfusion of 300 cc. eliminate the danger of pneumonia. Of twenty-two retroflexions, fourteen were symptomless, four were benefited, and four were not benefited. Of thirty-five cases, twenty-two were complicated. The method offers excellent results in both complicated and uncomplicated cases. KULENKAFFY (Z)

Weiss, E. A. Radium in the Treatment of Uterine Hemorrhage of Non Malignant Type. *Am J Obst & Gynec* 9 3 35

Eighty-three of the cases studied were cases of bleeding myoma. Only those in which the tumor was no larger than three months gestation were chosen for radium treatment. Intraligamentary or degenerating tumors were not considered suitable. In spite of favorable reports from other clinics, pedunculated tumors were also excluded from the series because those suggesting degenerative changes. Any evidence of inflammatory changes in the adnexa, either acute or chronic, contraindicates radiation.

Of all cases receiving full dosage forty were relieved at once and there was no return of the bleeding. Thirty-five of the women menstruated once and fifteen menstruated three to five times. Ten received treatments. The irregular bleeding for the first ten days after treatment is not to be attributed to the radium; it is rather the effect of the excitement, if not due to disturbance of the ovarian hormone. A large percentage of the patients had leucorrhoea in varying amounts for the first two to five months. Frequently this was very annoying and irritating. As a rule it was relieved best by douches of bicarbonate of soda. Probably the most annoying sequelae were nausea and vomiting which occurred when the radium was used. In the cases of patients who were not anesthetized these were often attributed to the preliminary doses of morphine, but the nausea as present in eighteen cases which neither morphine nor gas was given.

With regard to the treatment of benign hemorrhage from the uterus the author makes the following statements:

1. Radium should be used only in selected cases such as (1) myopathic bleeding of dolence which does not respond to the usual medical and hygienic measures (2) bleeding myomata which are of small or moderate size and uncomplicated by adnexal disease (3) the menorrhagia of the menopause.

The dosage depends upon (1) the age of the patient (2) whether the function of child bearing is to be preserved or sacrificed.

3. Myomectomy should be performed in the case of young women, and hysterectomy when the tumor is large or complicated, in preference to treatment with radium.

4. Complications and unfavorable results can be avoided only by a careful discriminating differential diagnosis.

5. All cases treated with radium should be carefully followed up for several years.

E. L. CORWELL, M.D.

Giles, A. E. The Indications For and the Results of Myomectomy. *J Obst & Gynec Brit Emp* 9 333 608

One important indication for myomectomy is the child bearing age. Myomectomy is the operation of choice up to the age of 40 years. In the author's practice, myomectomy has been performed on 5 per cent of women under 30 years of age, on 34.3 per cent of those between 30 and 35, on 9.3 per cent of those between 35 and 40, on 6.9 per cent of those between 40 and 45, on 5.1 per cent of those between 45 and 50, and 1 per cent of those over 50. Myomectomy is indicated also by the association of fibroids with prolapse, this complication requiring the preservation of the uterus for fixation to cure the prolapse. Another indication is objection to hysterectomy on the part of the patient. In some women the loss of the uterus is apt to be followed by profound and persistent depression. X-ray treatment is therefore preferable. Myomectomy may be properly done also in cases of solitary or pedunculated tumors not associated with excessive bleeding.

Hysterectomy is preferable to myomectomy after the age of 45 when fibroids are associated with bilateral tubal disease or ovarian tumors when the uterus is apt to be battered and useless when the fibroids cause excessive hemorrhage and when the patient demands complete cure and will not consider a 50 per cent risk of failure.

Myomectomy is done during pregnancy only in the presence of urgent symptoms or for fibroids complicating labor. Surgical treatment of fibroids during pregnancy may be myomectomy or cesarean section combined with myomectomy or hysterectomy. The indications for myomectomy during pregnancy are (1) rapid growth of the tumor (2) pain pressure symptoms, or indications of septic or degenerative changes in the tumor (3) when it seems evident that because of its position the tumor will obstruct labor. Myomectomy during pregnancy is a satisfactory operation.

RAYMOND E. W. TAINS, M.D.

Bonney, V. The Modern Scope and Technique of Myomectomy. *J Obst & Gynec Brit Emp* 9 333 59

The author reviews the history of myomectomy, details the difficulties encountered before the development of modern surgery. Reference is made to a remarkable paper read before the Liverpool Medical Society by Alexander describing a method of enucleating fibroids, the leading features of which were median laparotomy, single tenor incision in the front of the uterus, packing of the cavity left after the enucleation with iodoform gauze and

central fixation. Because of the severe criticism of the operation at that time it was discarded.

The author believes the uterus should be conserved in women in the child bearing age for the following reasons:

1. Many women both not borne children feel that they cannot justify their existence if all hope of reproduction is gone.

2. If hysterectomy is disturbing from sexual point of view.

3. In women under 45 years of age child bearing is possible if the uterus is conserved and the ovaries and adnexa are healthy.

4. The removal of the uterus hastens the menopause.

Bosney reports 100 cases of myomectomy in which from one to thirty fibroids were removed. The location of the tumor of little importance. If necessary the endometrial cavity may be opened. Cervical fibroid are the most difficult problem. Malignant degeneration, and necrosis and pyrexia due to sepsis are contra indications. If pregnancy pedunculated or superficially placed fibroid can be removed without great danger of losing abortion. The removal of more deeply seated tumors is associated with greater risk. Bleeding is difficult to control. The recent development of the curette or the curette for the excision of fibroids.

Menorrhagia and profound anemia contraindicate myomectomy but moderate menorrhagic anemia does not, provided all the tumor is removed and the remaining uterus is not too large for its position. In all cases fibroid with menorrhagia the uterine cavity should be opened to make certain that no small fibroid on the mucous surface, mucous polypus, or great thickening of the endometrium is left. For the scraping of thickened endometrium the author has found the curette the steel finger (formerly used for the removal of adenoids).

1. Bosney cases the most difficult of myomectomy was 2 per cent. One patient died of hemorrhage and another of shock. The chief danger is hemorrhage. In no case so far as is known, there has been recurrence of fibroid. If one of the ovaries become pregnant one or more times since the operation.

With regard to the technique of the operation the author states that all tumors are removed through single incision in the anterior wall. The fibroid most accessible through this incision is excised first and then this has been advocated the best most accessible is reached by secondary incision begun in the all of the cavity left by the first tumor. If the tumors are located in the posterior wall they go through the cavity of the uterus. Redundant tissue is cut away and the cut edges are closed and facilitate apposition in turning. The uterus is closed with internal and superficial sutures. In some cases anterior fixation of the uterus may be necessary. To control the ovarian vessels during the operation the author applies ring forceps on the

ovarian pedicle ligament. If the operation is to be difficult he also temporarily clamps the uterine artery on both sides. All four main vessels of the uterus may be safely ligated without fear of pyrexia.

The article is concluded with the statement that a rule should not recommend hysterectomy and that if all women with fibroid could submit to operation by hysterectomy could never be necessary for this condition.

R. W. L. W. L. W. L.

Gordon, O. A. The Treatment of Hydatiform Mole and Chorio-epithelioma. A Consideration of the Relative Frequency of Each. Surg. Gynec. & Obst. 93, 1911, 4.

If hydatiform mole is a condition in which there are characteristic microscopic and gross changes in the chorionic villi. Microscopic examination shows proliferation of the trophoblastic elements, an increase in the stroma and an increase in the syncytium. Grossly there is a characteristic grape-like mass of vesicles.

In the author's opinion this condition is much more frequent than has been generally supposed. It may be confined to a small area of the placenta and careful examination is necessary to discover the presence of few vesicles, many cases must escape notice. Among 500 abortions at Bellevue Hospital in New York City there are twenty-one hydatiform moles (4 per cent). The mortality is not present accurately estimated at from 15 per cent. At Bellevue Hospital it is 9 per cent. The causes of death are hemorrhage, sepsis and chorio-epithelioma.

Chorio-epithelioma is an extremely rare condition. It is preceded by a hydatiform mole in a large percentage of cases. It is well established fact, but this does not permit the conclusion that a large percentage of hydatiform moles are followed by chorio-epithelioma. In eleven cases there has been but one chorio-epithelioma at Bellevue Hospital and this is a doubtful case.

In view of the rarity of chorio-epithelioma and the frequency of hydatiform mole the mole should be treated mainly to prevent hemorrhage and sepsis. As the possibility of the development of chorio-epithelioma is remote, such radical treatment as hysterectomy is not necessary in all cases of hydatiform mole. Curettage also should be avoided as it is impossible to remove the deeper part of the vesicles in this way and there is danger that the uterine wall has been thinned by the growth.

If far the larger percentage of cases will be successfully terminated by the manual removal of the hydatiform mole. In the event of irregular bleeding following this procedure laparotomy with hysterectomy should be performed. This will permit thorough inspection of the uterus and may be followed by hysterectomy if evidence of chorio-epithelioma is discovered. In cases of chorio-epithelioma radiation should be efficacious both as prophylactic and

therapeutic measure. The bilateral ovarian cysts which are associated with both hydatiform mole and chorio epithelioma in over 80 per cent of the cases are short lived, show no evidence of malignancy and undergo regression after the removal of the uterine condition.

H. W. FINK, M.D.

Burns, J. W. Chronic Endocervicitis and Its Treatment. *J. Obst. & Gynec. B. H. Emp.* 9, 322, 619.

This article is based on a study of eighty-four cases of uncomplicated endocervicitis.

This condition is most common in multiparae between 30 and 40 years of age, next most common in women between 20 and 30 years of age and least common in young unmarried girls. It arises from direct infection of the cervical canal as in gonorrhea, infection of cervical wounds caused by labor or operation, or as in the young girl with intact hymen, the direct upward spread of infection from the external genitals. In the cases of uterine mass infection may play a part.

As a rule the vaginal discharge is of thick white mucoid consistency but it may be thin, white, yellow or green. Usually it is most profuse in the morning and before and after menstruation. General debility, leucorrhoea, anemia, headache, and constipation are other symptoms. Menstrual function is not influenced. In one third of the cases there is pain in the left side. Complaint is frequently made of pruritus vulvae. Thirty-seven per cent of the married women in the author's series were sterile; 30 per cent had had one or more children and no miscarriages, 27 per cent had had one or more children and one or more miscarriages, and 1 per cent had had miscarriages only.

Endocervicitis is of two forms—the acute and the chronic. The acute form is usually found in gonorrhea and following infection of injuries of the cervix due to labor or operation. The chronic form may follow the acute or may arise as a chronic condition *per se*. The cervix may appear quite normal except for the thick tenacious, yellowish mucus issuing from the os. Hypertrophy, dyscrasia may or may not be present. Microscopic section shows: (1) hypertrophy of the glands; (2) blocked gland ducts; (3) small dilated cysts lined with low cubical epithelium; (4) areas in which the pavement epithelium has been shed; (5) round-cell infiltration; and (6) varying degree of fibrosis.

A bacteriological examination of the cervix in sixty-six cases showed positive growth of bacteria in culture media. The end of the first four hours in 9.5 per cent. The staphylococcus albus was found in 45.45 per cent, the staphylococcus aureus in 5 per cent, streptococci in 6.66 per cent and bacillus coli in 13.63 per cent.

The staphylococcus albus was associated with the bacillus coli, streptococci, the gonococcus and micrococci catarrhalis and the trigenus in about 20 per cent of the cases. Dermatitis was present in 3 per cent.

With regard to the treatment the author discusses: (1) drugs and caustics; (2) curettage; (3) douching; (4) trachelorrhaphy; (5) conization; (6) ionization. Iodoform ointment is the only scientific method of applying antiseptics to the cervical canal. Of thirteen cases in which the first wash was positive only seven remained positive after the application of 30 ma. for ten minutes on the first remained positive after the second application, and only two or positive after the third application. The technique of the treatment is as follows:

The patient is placed in the dorsal position with the knees drawn up and a medium sized glass Ferguson speculum is passed until the cervix fits into its upper end. The os is then dried and cleaned by means of small sterilized gauze swabs. A swab for bacteriological purposes is taken from the cervical canal and the reaction of the canal is determined by means of litmus paper. A malleable zinc sound is then passed to the cervix for 1/2 in and the speculum is filled with 0.5 per cent zinc sulphate solution. The zinc rod is connected with the positive pole of the galvanometer and the negative pole applied to the patient through by means of metal plate superimposed on two or three pairs of gauze and lint wrung out in warm water. The current is then turned on raised to 30 ma. and allowed to run for 5 minutes. By the end of this time the os and the cervical canal will be coated with thick white deposit. The zinc sulphate is then mopped out with gauze soaked in 1:1000 creolin and is introduced into the vagina. The gauze is removed in ten to fifteen hours.

This treatment is repeated every seven days for three weeks during which time no douching or intercourse is permitted. Three applications are usually sufficient to render the cervical canal sterile.

Some of the patients complain of slight backache for the first eight hours. In one case in which there was history of gonorrhea eighteen months previously acute attack of pelvic inflammation was set up in forty-eight hours. In one case of retroflexion menorrhagia was made worse.

Of the sixteen patients with erosion three were definitely cured (no discharge for three to four months following the treatment) one developed acute pelvic inflammation eight were benefited as far as the discharge was concerned but the erosion remained. Three were not benefited at all and three did not take the full course of treatment.

Of the twenty patients without erosion thirteen were cured (no discharge for one to four months) two were not benefited (one had had a uterine myoma resected previously and the other showed post-climacteric changes in the uterus and aquia) one became worse (retroflexion) and four did not take the full course of treatment.

It appears from these results that cases with erosion are improved but not cured while those without erosion are greatly benefited. Cases complicated by pelvic inflammation or displacement of the uterus are not suitable for this treatment.

entral fixation. Because of the severe criticism of the operation at this time it was discarded.

The author believes the uterus should be conserved in women in the child bearing age for the following reasons:

1. Many women who have not borne children feel that they cannot justify their existence if all hope of reproduction is gone.

2. Stereotomy is disturbing from a sexual point of view.

3. In women under 45 years of age child bearing is possible if the uterus is conserved and the ovaries are healthy.

4. The removal of the uterus hastens the climacteric.

Bonney reports 100 cases of myomectomy in which from one to three fibroids were removed. The location of the tumor is of little importance. If necessary the endometrium can be opened. Cervical fibroid is the most difficult problem. Malignant degeneration, necrosis and ulceration due to sepsis are contra-indications. If pregnancy is complicated or superfluous placental fibroids can be removed without great danger of miscarriage or abortion. The removal of more deeply situated tumors is associated with greater risk. Bleeding is difficult to control. The recent development of the isocaval for the excision of fibroids.

Menorrhagia and profound anemia constitute a good cat myomectomy but moderate menorrhagic anemia does not provided all the tumors are removed and the remaining uterus is not too large for involution. In all cases of fibroids the myomectomy should be opened to make certain that no small fibroid on the mucous or submucous polypus or great thickening of the endometrium is left. For the scraping a curet of thickened endometrium the author has found very efficacious the steel finger nail formerly used for the removal of adenoids.

1. Bonney cases the mortality of myomectomy was 1 per cent. One patient died of hemorrhage and another of shock. The chief danger is hemorrhage. In no case so far is known to have been recurrence of fibroids. 11 of the women have become pregnant one or more times since the operation.

With regard to the technique of the operation the author states that all tumors are removed through a single incision in the anterior wall. The fibroid most accessible through this incision is attacked first and when this has been nuked the next most accessible is reached by a secondary incision begun in the wall of the cavity left by the first tumor. If the tumors are located in the posterior wall he goes through the cavity of the uterus. Redundant tissue is cut and the cut edges are beveled inward to facilitate approximation in closing. The uterus is closed with mattress and superficial sutures. In some cases temporary fixation of the uterus may be necessary. To control the ovarian vessels during the operation the author applies ring forceps on the

Group 4 includes the postoperative recurrences. Of the cases reviewed, ten were in Group 1, forty three in Group 2, fifty eight in Group 3, and five in Group 4. All of the patients in Group 1, two of those in Group 2, four of those in Group 3, and two of those in Group 4 are still living.

V. E. DUNN M.D.

ADnexAL AND PERI-UTERINE CONDITIONS

Hood, M. R. Fibromata of the Ovary. *Surg. Gynec. & Obst.* 9 3, xxxvi, 247.

In the Mayo Clinic from January, 1900, to August 1, 1921, fifty-five fibromata of the ovary not associated with other pathologic conditions were removed at operation. The diagnosis was confirmed by microscopic examination in every case. During the same period a total of 4,175 tumors of the ovary were removed. One hundred and forty-nine (3.5 per cent) of these were fibromata, but ninety-four were associated with cysts, either benign or malignant fibromata of the uterus, etc., for which the operation was performed. The incidence of ovarian fibromata is usually given in the literature as 1 per cent.

Infection, hemorrhage, hyperemia, inflammatory processes, and keloid formation may be factors in the origin of fibromata of the ovary. They are found at any age after puberty but more often develop near the time of the menopause. In the series of cases reviewed the youngest patient was 8 years of age and the oldest 73. Twenty-six were menstruating, three were at the menopause, and twenty-six had passed the menopause. As a rule menstruation is not affected by this condition, but the menopause may be delayed.

The symptoms are subjective and objective. The most common subjective symptoms are pain, dysuria, and frequency, constipation, and pain on defecation. Objectively the tumor is usually movable, but may be fixed by adhesions. The growth had been present for from a few months to thirty years, although in some cases the patient is unaware of even a large tumor.

Pain was present in thirty-three of the fifty-five cases. The tumor was movable fifty-one. As a rule it was present in fourteen (25 per cent) in amounts varying from 5 to 16 liters. In fifty-three cases the tumor was unilateral.

The diagnosis depends on the presence of a unilateral tumor of the pelvis, non-fluctuating, and separate from the uterus. In the differential diagnosis, pedunculated fibromyoma of the uterus, solid carcinoma, and solid sarcoma of the ovary, desmoma, etc., must be considered. In the presence of cysts, carbuncles of the liver, abdominal malignancy, tuberculous, etc., must be considered.

The treatment is surgical. Radium and the roentgen ray should be reserved for cases in which operation is contra-indicated on account of coexistent conditions such as senile cardiac lesions and nephritis.

The prognosis is good following surgical removal. Pre-operatively and when the patient refuses opera-

tion, the prognosis is influenced by the possibility of twisted pedicle, general peritonitis, or malignant degeneration.

The following conclusions are drawn:

1. Fibromata of the ovary may occur at any age after puberty. They constitute 3.5 per cent of all ovarian tumors.

2. There may be comparatively few symptoms and the tumor may be present long time without the patient's knowledge.

3. Ascites and tumor of the pelvis do not necessarily mean abdominal malignancy.

4. The treatment is surgical. All ovarian tumors should be operated on as soon as diagnosed.

5. The prognosis is good after operation.

6. Sterility and menstrual function is as normal as can be expected following unilateral ovariectomy.

7. Normal pregnancy may occur in women of child bearing age who only one ovary or one ovary and no tube has been removed.

EXTERNAL GENITALIA

Markoff, N. W. Bilateral Resection of the Pudendal Nerves for Vulval Pruritus (Doppelseitige Resektion der Nervi pudendi interni bei Pruritus alvae). *Russk. Gyn. & Obst.* 9 1, 83.

The author reports six cases of vulval pruritus in a virgin 43 years of age which proved refractory to numerous therapeutic measures. Finally the method of Kocher was used. Both internal pudendal nerves were exposed by dissection and the branches running to the genitalia were teased out with forceps. This resulted in anesthesia of the labia, but did not affect the normal sensibility of the anal region. The pruritus entirely disappeared. KOWAL (2).

MISCELLANEOUS

Curtis, A. H. The Diagnosis and Relief of Sterility. *J. Am. Med. Ass.* 9 3, lxxx, 303.

Laboratory study combined with clinical evidence leads Curtis to the conclusion that, the absence of clinically demonstrable pelvic pathology, sterility is nearly always due to infection. Detailed study of grossly unaltered or slightly adherent fallopian tubes reveals that the mucosa is often crippled by healed inflammatory changes.

When opening of the abdomen is indicated in cases of sterility, air inflation of the fallopian tubes by means of Luer syringe is performed as routine. Provided active infection is not found. By this simple procedure the presence of otherwise undemonstrable obstructions within the tube may be discovered. Minor strictures may be overcome by forcible syringe pressure, the anatomical limitations of grossly palpable obstruction, possibly amenable to plastic operation, may be more definitely determined and, at the completion of plastic operations on the tube, the patency of the lumen may be tested.

The author finds, also, that tubal inflation magnifies the regional anatomy, thus facilitating the study of

congenital defect and fetal axial variations in the structure. Lane links of the peripheral error previously recognized small distal and other deviations from the normal are frequently revealed.

Von Albertini, A.: The Association of Different Malignant Tumors and Tuberculous in the Same Organ (Kombination verschiedener maligner Tumoren mit Tuberkulose im selben Organ). *Schweiz. med. Wochenschr.* 9, 1909.

Von Albertini reports an unusual case in which every different kind of malignant tumor and tuberculosis are found. This originated in a tubercle once by Hildebrand in the lung. In this author we know the location of the adenoma associated with carcinoma of the gland. Location of the tumor with adenoma of the gland of the testis, which is surrounded by fresh military tubercles.

Very extensive tubercles have led to the common belief that there is certain link between tuberculosis and carcinoma and general tuberculosis. On the other hand, it may be warned on the basis of the literature and Ribbert's theory that tuberculosis may predispose to the development of carcinoma. The author does not believe that in his case there was any reciprocal relationship between the older tuberculous disease of the gland and the neighboring carcinoma of the apical part of the cervix,

but he does think there may have been relationship between the scrofulous nodules in the gland of the testis and the fresh military tubercles in the gland. He holds the view that the tumor obstructed the local lymphatic circulation so that the tubercle bacilli could multiply in the lymphatic vessels and their development is rapid.

BRUNNEN

Seilheim, H.: An Explanation of the Axial Twisting of Fetal Organs and the Twisting, Kinking, and Knotting of the Embryonic Cord. (Zur Erklärung der Axialverdrrehung fötaler Organe sowie der Verdrrehung, Knickbildung und Verknüpfung der Nabelschnur). *Munch. med. Wochenschr.* 26, 1909.

Seilheim takes as an example the axial torsion of ovaries and uterus. He attributes the twisting of the pedicle to habitus formation of the body or body terminals alone. The twisting of the pedicle of an abdominal tumor occurs more of the more fluid the content of the tumor. The axial torsion of the embryo and that of the procreant pregnant or parterral uterus and the uterus in the process of delivery is explained in the same way. The twisting tendency is opposed by friction, which may prevent axial torsion. The twistings of the human umbilical cord are attributed to the transmission of the movements of the mother. LANGE

OBSTETRICS

PREGNANCY AND ITS COMPLICATIONS

Wetz, W. E. True Eclampsia and Renal Eclampsia
J. Michigan State M. Soc. 9:3, xxi, 7

Renal eclampsia is divided into two types: that following chronic interstitial nephritis and that following chronic parenchymatous nephritis.

A history of nephritis may or may not be given in a case of renal eclampsia. Not infrequently renal injury occurred in infancy following an infectious disease or has not been recognized though present during a period of illness antedating pregnancy by years. In cases of renal eclampsia due to interstitial nephritis the first half of pregnancy is characterized by a high blood pressure, polyuria, low specific gravity of the urine, erythraemia, and, rarely, the presence of casts in the urine. The functional capacity of the kidney is decreased early and the decrease becomes more marked as the toxemia increases. Nocturia is usually present. There is slight or no edema. As pregnancy advances especially during the last four months, there is considerable increase over the average high blood pressure for the patient. The systolic pressure commonly rises to between 200 and 300 mm. After delivery the drop in pressure is not great, the high average present before pregnancy being maintained. Cardiac hypertrophy is always present. There is a tendency to cerebral hemorrhage as well as retinal hemorrhage and optic disc edema. There are apt to be continuous headaches. The blood examination usually shows an increase of non-protein nitrogen. The uric acid increases first, then the urea, and last the creatinin, just as in uremia. Before the onset of convulsions subjective signs particularly amaurosis are arising. These women frequently miscarry or give birth to premature stillborn infant without convulsions. After delivery all the cardinal symptoms of chronic interstitial nephritis remain.

Renal eclampsia due to chronic parenchymatous nephritis follows a different course from that resulting from chronic interstitial nephritis. There is usually a history of nephritis of the tubular type. In the severe cases there are typical symptoms of this condition before pregnancy begins. These consist of lightly increased blood pressure, a pasty complexion, slight anemia, slight edema, decrease in the urinary output, and the presence of casts and considerable amount of albumin in the urine. When the renal damage is slight these symptoms may be absent or too poorly developed to attract the notice of the medical attendant. The blood pressure at the beginning of pregnancy may be so little above normal as to deceive regarding the presence of renal damage. The pressure runs the typical curve of toxemia as in true eclampsia, retreating to the nor-

mal for the patient after recovery. The pressure does not rise so high as in the other forms of toxemia and the peak attains a level which is lower than that of true eclampsia and much lower than that of renal eclampsia of the glomerular type.

Edema is the most prominent symptom of this type. If it is not present at the beginning of pregnancy it appears during the first few months. Usually it begins at the feet and gradually rises to the trunk. Edema of the face and hands develops as the condition advances. As the kidney fails in function anasarca develops. Edema of the lungs is apt to appear suddenly. After recovery there is gradual resorption of the fluid. During the stage of increment the retention of fluid in the body causes decided increase in weight. With recovery there is loss of eight up to 60 or 70 lbs. Abnormal urinary symptoms are always present at the beginning of pregnancy. Serum albumin is found in varying quantities from trace to very heavy deposit. As renal insufficiency develops the percentage of albumin greatly increases. As edema develops the output of urine is decreased. Casts are found in considerable numbers. At the stage of greatest insufficiency red blood cells are usually found in the urine. Phenolsulphonephthalein tests indicate very low renal functioning capacity. In marked cases albuminuric retinitis develops. There is a tendency for pregnancy to end prematurely. Recovery after the termination of pregnancy leaves the patient with characteristic symptoms of parenchymatous nephritis.

It is not always possible to distinguish the two types of renal eclampsia. Cases of true eclampsia are difficult to differentiate from renal eclampsia because they come under the observation of the obstetrician at the height of the disease, but true eclampsia is not difficult to diagnose if one is able to follow the case from the beginning of pregnancy through labor and the puerperium. The development of the toxemia during pregnancy and the recession to normal after delivery are very characteristic. True eclampsia is difficult to prevent, but the milder type can be controlled to a degree sufficient to prevent convulsions.

The prognosis is always graver when convulsions and coma develop. Women recovering from convulsive seizures return to their normal physical condition without impairment of vascular or renal function. Future pregnancies are not subject to eclamptic toxemia and should terminate favorably for the mother and child. The fetal prognosis is grave even when convulsions do not occur.

Proper prenatal care will prevent most convulsive seizures and almost eliminate maternal mortality. Individualization must be the shibboleth in the care

fall toxic cases in late pregnancy. As soon as possible the type of toxicosis should be determined. The care follows the lines of prophylaxis.

C H D vs M D

Davidson, H. J. A New Procedure in the Treatment of Eclampsia. *S. of G. and Obs.* 1933, 33:14, 80.

In this article the author presents additional evidence of the value of giving large amounts of fluid by mouth in the treatment of eclampsia.

When water is given by hypodermocentesis it adds to the stagnant peritoneal fluids already in the tissues and tissues space is absorbed slowly and reaches the liver and kidneys fractionally. When given by rectum it is slowly absorbed, is retained, enters the hemorrhoidal and inferior mesenteric circulation from viscera with poor absorption and passes only in part by way of the portal. Water given by intravenous administration is disseminated throughout the systemic circulation reaching the portal circulation greatly diluted and in fractional parts after having passed through two sets of capillaries, those of the lung and those of the splanchnic area. Water given by way of the stomach is absorbed directly into the portal system and conveyed in highest concentration to the liver yielding the greatest amount of electrolyte in highest concentration in minimum of time. It is a significant fact that in health water is excreted by the kidney more promptly than it is given by mouth than it is given in other ways. A further study of the biochemistry of water has been found that it is not easily excreted by the kidney until it has been acted upon by the liver by way of the portal circulation. A surprisingly large quantity will be eliminated in brief time. That most of the water taken by mouth is absorbed into the portal circulation is evident from the fact that however much is ingested, the stools do not become watery.

The author's treatment in postpartum eclampsia consists in first giving a large dose of morphine by hypodermic injection, 0.5 to 1 gr. repeated as indicated. In 15 four hours 2½ liters of water is introduced into the stomach through the tube. The larger quantity unless signs of edema supervene in such case the tube is quickly withdrawn. Regurgitation or vomiting has never occurred in the author's cases and he has never given less than 1 liter in some instances the quantity has approached 3 liters. In a total of more than seven cases he has never recovered a drop of water introduced four hours previously. One to one and half ounces of Epinephrine is given twice in the next four hours and 30 gr. of potassium acetate or citrate or some alkaline diuretic is administered with each grange. Excessive bedclothing, artificial heat, hot packs, and bleeding are all discarded. By the method described, prompt recovery is obtained more promptly and far more copious than by the old procedures.

The simplicity of the procedure makes effective treatment possible in the poorest home. The fluid

tolerance is combated by means of castor oil, passive hot stupes, and enemata. Cardiac stethoscope is given if indicated, and spinal puncture is done if shock is affected and the EEG records show evidence of the shock. In cases of prepartum eclamptic convulsions the author regards it as advisable to use the duodenal tube as the stomach probably will not retain 1½ liters of water 1000 while it is necessary to introduce that amount into the duodenum in very short time. The tube may be left in as it attends can prevent its withdrawal.

In the series of 100 cases there were no maternal deaths. One child was lost because following the cesarean section necessary for its delivery the physicians were so intent upon the mother that they failed to give the nurses explicit instructions regarding its care. This child died after a convulsion when it was only four hours old. C H D vs M D.

Murray R. D.: Uterine Fibromyomata Complicating Pregnancy. *Minnesota Med.* 9, 1934, 775.

The relative frequency of uterine fibromyomata is one to every eight white women and one to every three colored women. Fibromyomata are probably one of the causes of sterility. The latter view.

In cases of fibromyomata complicating pregnancy. Most women with uterine fibromyomata complicating pregnancy have no symptoms, but as most of those in the series sought advice on account of ill health, the percentage having symptoms was rather high. Pelvic or low abdominal discomfort was the chief complaint, this being present in 75 per cent.

Occasionally it is impossible to establish the diagnosis of early pregnancy in the presence of a uterine tumor. The importance of a careful history of the menstrual flow and of the rapidity of enlargement of the tumor is emphasized. In cases of doubt waiting policy is recommended. The effect of pregnancy on fibromyomata are mentioned, namely, an increase in size with occasional necrosis of the tumor tissue degeneration, etc. The effects of fibromyomata on pregnancy may be miscarriage, hemorrhage, dystocia, or postperal complications.

The treatment of these cases is expected and operative. Expectant treatment was given in 46 per cent of the cases, a report of which records 15, fifteen miscarriages, ten premature labors, and thirty-six living babies. A follow-up of these cases revealed that only seventeen had operations for the tumor after confinement. The operative treatment included myomectomy in fifteen cases and cesarean or Porro cesarean operation in eleven cases. There were seven hysterectomies, three on term containing macerated fetus in six cases in which pregnancy was suspected but not definitely diagnosed until the fetus containing a degenerated tumor had been removed and opened and two in which the tumor had been removed. From January 9 to January 9 there were 453 hysterectomies for benign uterine tumors and 741 myomectomies on non-pregnant uteri.

The author draws the following conclusions:

Most women with fibromyomas of the uterus pass through pregnancy and confinement without alarming symptoms and may be treated expectantly.

A careful history of the menstrual flow with special note of the exact date and description of the last menstrual period, is of the utmost diagnostic importance in the examination of women with fibromyomas of the uterus especially if the tumor is enlarging rapidly.

If there is the least doubt concerning the possibility of pregnancy the diagnosis should be delayed for several weeks or months if necessary, unless the symptoms are such that delay is dangerous.

An operation for fibromyoma of the uterus associated with pregnancy is sometimes indicated before the period of viability. This may be an abdominal exploration or myomectomy. Exploration of this type of tumor might be made more freely if myomectomy is sometimes definitely indicated and the incidence of miscarriages following it is not unduly high. Hysterectomy is rarely indicated before the period of viability and should be resorted to only when the symptoms are alarming. It has not been necessary to advise by terectomy prior to the period of viability in any case which diagnosis of fibromyoma complicating pregnancy with living fetus is established.

The operation of electrocoagulation operation is indicated in Pterocoelecan or cervical section at term.

Arrey, L. B. The Cause of Tubal Pregnancy and Tubal Twisting. *Am J Obst Gynec* 9: 53.

The production of twins, separate or conjoined and all non-hereditary malformations of organs and parts are reducible to a single causal factor namely properly timed developmental arrest. This generalization constitutes one of the most notable contributions to modern embryology.

The fertilized ovum ordinarily takes a week or more in its passage to the uterus. During this period it does not normally become attached to the uterine tube. Any change which delays it in its progress favors tubal pregnancy. Impediment includes abnormal uterine contractions, doublets, kinks, fibrous adhesions, difference in the mucosal folds (follicular salpingitis), epithelial diverticula, and impairment of the ciliated cells. Delay may also occur after migration from the opposite ovary. Since tubal implantation is definitely associated with preceding inflammatory changes, it follows that the mucosa has been injured but at the time implantation is possible the inflammation must be largely healed. After the ovum is taken up by the mucous membrane at the outer end of the tube, the following occurs: When there is impairment of the ciliated cells it may be delayed in its progress until it becomes too large to pass into the uterus through the narrow portion of the tube. In other cases it wanders into blind pockets or epithelial diverticula.

More common it is transported to the middle of the tube where inflammation and follicular salpingitis are most common and there becomes lodged because the ciliated cells carry it no further.

When blocked the ovum may attack the tubal wall. In the meantime it has attained a later stage of development than is usual in implantation. Therefore if such delayed implantation occurs with the establishment of tardy or inadequate cytotrophoblasts at the critical moment for twinning, the embryonic axes assert themselves, as in the fish, chick, and marmoset and monozygotic twins result. This sequence of events is assumed from the publication of Stockard's discovery of the known condition of the tube and ovum in the tubal pregnancy and helps to account rationally for the preponderance of single ovum twin pregnancies in the tube as compared with the uterus.

The production of uterine monozygotic twins and monsters is doubtless closely allied with, or even indirectly dependent upon the same tubal conditions. A nearly healed or structurally modified tube may deliver the unit to the uterus, although tardy inflammation of the uterine mucosa alone may produce the same result. To what extent these factors operate separately and in combination must remain unsettled.

There is demonstrable frequency of faulty implantation in tubal pregnancies. Under such conditions Mall failed to find typical decidua hence the possibility of checking hemorrhage by the formation of a dam between the lips of the illi and the eroded mucosa is foregone. Numerous hemorrhages result which form old clots between the villi. Even the best specimens frequently show such extensive hemorrhage around the chorion and such marked degeneration of the illi that it is a wonder the amnion continues to grow normally. Permanent or temporary setbacks occurring while the chorion is struggling to overcome natural deficiencies in its nidus are sufficient to account both for excessive twinning and for the observed double frequency of malformations in these specimens over the uterine group.

Studies of normal and pathologic tubal implantation convinced Mall that the primary cause is a factor of such monsters as faulty implantation which prevents an adequate transfer of nutriment. Stockard agrees regarding the primary element but from his experimentation is forced to believe the causative cause is lack of sufficient oxygen.

E. L. CORNELL, M.D.

Hawley, L. M. Immediate Versus Delayed Operation in Cases of Collapse Following Ruptured Ectopic Pregnancy. *Surg Gynec & Obst* 93: 336-343.

The proper time for operation in cases of collapse due to ruptured ectopic pregnancy is still in dispute. Of 824 cases of ruptured ectopic pregnancy reviewed by the author 87 showed collapse. One hundred and thirteen of these urgent cases were operated upon immediately. Of the remaining seventy-four

patients, ten died of hemorrhage unoperated upon. Three of the ten, through errors in diagnosis, did not receive regular palliative treatment. Omitting these three, the number of deaths in critical cases treated expectantly was seven (50 per cent).

The Medical Examiner's Office has recorded twenty-one deaths from hemorrhage in the last four years. The records of the Board of Health of the Borough of Manhattan show that in 1921 there were twenty deaths from ectopic gestation, and that five of the twenty women died of hemorrhage unoperated upon. Fatal hemorrhage therefore occurs with sufficient frequency to warrant an attempt at immediate operation to prevent it.

In 113 cases operated upon immediately there were ten deaths, a mortality of 8.8 per cent. It would seem that better results were obtained from the immediate operation than from expectant treatment and deferred operation. In recent years methods of treatment have been so greatly improved that advocates of either procedure are loath to use statistics more than ten years old. In the twenty-one critical cases operated upon at the New York Hospital during the past six years there was one death. This was due to cerebral embolism and pneumonia and occurred on the fourth day after the operation.

H. W. Fink, M.D.

Good, F. L., and Richards, T. K. Ovarian Pseudocyst. *Surg. Gynec. & Obst.* 36, 337-341, 1923.

The authors' patient complained of pain in the lower abdomen and loins. Her temperature, pulse and blood pressure were normal. She had had one previous full-term pregnancy. Amenorrhea began thirteen months before her entrance into the hospital and persisted for eight months. For the past six months the periods had been regular. Physical examination was essentially negative, except for the presence of a tumor the size of six or seven months' pregnancy in the lower and posterior portion of the abdomen. The cervix was not taken up and the os admitted one finger.

At operation the uterus was found normal in size and anterior to a tumor associated with the left ovary. The right tube and ovary were normal. The tumor was adherent to the lower end of the broad ligament and bladder in front and to the omentum and intestines. It appeared to be a large ovarian cyst with pedicle thicker than normal. When the sac of the tumor was opened, full-term fetus surrounded by foul smelling puriform amniotic fluid was exposed. It was impossible to find any ovarian tissue on the left side.

The specimen was a slightly oval mass measuring 2 by 10 by 11 cm. and weighing 370 gm. (5 1/2 lbs.). The fetus was well developed. The legs, hands, and finger nails were perfectly formed and there was no evidence of gill clefts or other embryonic structures indicating prematurity. The placenta was attached to the inner wall of the mass at the end opposite the head. Microscopic sections taken from many places showed nothing but dense fibrous tissue corpora

lutea, and a few distended ovarian follicles. In one series of sections a cross section of the product was found. The tube was intact but the fibrinated end was spread out over the mass. Apparently the fibrinated end had become attached to the ovary at some previous time so that when the ovum became impregnated and the ovary enlarged, the tube became stretched across the surface of the organ and was caught in the fibrous tissue eventually formed.

H. W. Fink, M.D.

LABOR AND ITS COMPLICATIONS

Haynes, L. W. Acute Complete Inversion of the Uterus. *J. M. Supp. State M. Soc.* 9, 122, 1923.

One of the important predisposing causes of acute complete inversion of the uterus is to be found in the fundal attachment of the placenta, as first suggested by Thoms. Haynes believes, however, that too great emphasis has been given to errors in the conduct of labor for if undue pressure on a relaxed uterus from above or too great traction on the cord were of great importance, we would hear of many more cases than we do. If the figures the author has collected are of any value they show that the condition is becoming more frequent in spite of continued improvement in obstetrical technique.

Inversion has occurred twice in subsequent labors in the same patient when all precautions were taken to prevent it. Carruthers reports two inversions in the same woman in consecutive labors. This could lead to the assumption that in some cases there is a special predisposition.

The diagnosis of acute complete inversion is not difficult. As a rule the process of inversion is complete in few seconds. One object symptom is pain in the case reported by the author the patient as under ether anesthesia but she made several sharp cries as if in great agony. In cases of mild subacute and incomplete inversion this symptom is not often present.

The second symptom is that of shock out of all proportion to the amount of blood lost. The pulse becomes small and quick. Some writers attribute the collapse to the reduction of pressure in the abdomen. If Jones' opinion that no good explanation Herman has suggested that it is due to stimulation of the uterus and sudden exposure of the sensitive internal os surface.

In earlier years about three of every four women so affected died. More recently most writers give the figures as one-fourth.

The author considers the treatment to be in separate headings. When shock is severe and when shock is not severe. If we are about to remove the placenta if it is attached and greatly presses the uterus into the groin. The hemorrhage is stopped by hot saline douche by going to cross perineum and if necessary by obstructing the uterus just below the cervix with piece of sterile rubber tubing. The usual treatment for shock is then given. When the patient has rallied

ufficiently replacement is attempted. Deep ether anesthesia should be used. The lithotomy position is helpful. The left hand is placed over the lower abdomen while the right hand is passed into the vagina behind the uterus, grasping it and gently pushing upward and forward toward the left hand. If necessary the pressure is kept up for ten to twenty minutes. In cases in which such manœuvres are not successful it is best to pack the vagina or use a bag or repousser. When these fail, gynecological procedure is necessary.

When shock is slight, the uterus should be replaced at once if possible.

C. H. DAVIS, M.D.

Waldstein, E. The Classical Cesarean Section under Local Anesthesia with Temporary Fixation of the Uterus (Klassische Kaiserschnitt mit Lokalanästhesie mit temporärer Fixation des Uterus). *Wien. Klin. Wochenschr.* 92, xxv, 85.

In 1914, Traugott and Juné reported on cesarean sections they performed under local anesthesia. No doubt this has been done frequently since the but has not been reported in every case.

The author reports three cases in which the general condition (severe pulmonary tuberculosis in one and decompensated mitral stenosis in two) made it necessary to perform a cesarean section under local anesthesia. After the administration of 0.05 gm of morphine the abdominal skin and the parietal peritoneum were infiltrated with 50 to 60 cm of 0.5 per cent solution of novocaine with the addition of a few drops of drenaline solution. It is very important to prevent the protrusion of the abdominal contents during the operation. Therefore the uterine applied tenacula to the uterus before incising it as in this way he was able to close off the wound in the abdominal wall as if with a pad and to prevent the entrance of amniotic fluid into the abdominal cavity and traction on the uterine ligaments.

SCHUBERT (Z.)

NEW BORN

Greenhill, J. P. The Association of Fetal Monstrosities and Deformities with Placenta Previa. *Surg. Gynec. & Obst.* 93, xxxv, 7.

Ten fifteen cases of the association of fetal monstrosities with placenta previa which he found reported in the literature the author adds six others, including 10 of his own.

In explanation of such cases Greenhill states that for some reason the ovum is implanted in the lower uterine segment, that when this occurs the relation

between the placenta and the fetus is faulty and that the faulty relationship is responsible for the arrest of development.

Thirteen of the twenty-one monsters mentioned in this article showed cranial or intracranial defects. According to Mall, the heart or the central nervous system is the first to be destroyed in the embryo.

In conclusion the statement is made that since fetal monsters are not infrequently associated with placenta previa, it is advisable, when cesarean section is contemplated in cases of placenta previa, to attempt to ascertain by physical and X-ray examination whether the fetus is deformed or not.

H. W. FIDAL, M.D.

Weverinck. Intraperitoneal Infusion (Ueber intraperitoneale Infusionen). *Deutsche med. Wochenschr.* 9, xlviii, 577.

The author used intraperitoneal infusion at the Children's Clinic at Düsseldorf for the quick administration of water in water-impaired conditions. Seventy-two infants were treated in this manner and more than 100 injections were given. Sixty of the infants died and twelve recovered. In one case peritonitis and in another shock developed. The condition for which the treatment was given was in most cases severe intoxication, typhoid, dysentery. In dermatitis or sepsis, subcutaneous infusion or drip infusion was chosen.

In the intraperitoneal infusion the site of injection is the middle or lower third of the line from the navel to the spinous process of the ilium. The skin is disinfected with alcohol, ether or iodine. A 100- to 200-cm syringe fitted with a long injection tube with the point cut off short and a rubber tube or connecting piece is used. The skin is not divided with a scalpel or scissors. The layers of the abdominal wall are penetrated by slight pressure. The fluid is injected in physiological salt solution. Klinger's solution or less frequently a 1 per cent solution of glucose. The youngest infants are given from 100 to 200 cm and older children 400 cm. After the injection, hot packs are applied to the abdomen, and adrenalin and caffeine are given.

Although it does not always save life in cases of severe intracranial disturbances, the author believes that the intraperitoneal infusion of fluid is to be preferred to subcutaneous administration because of its simplicity, certainty and painlessness. The danger of peritonitis is slight even in the most severe cases in which the resistance of the body is low. Strict asepsis, however, is essential.

O'NEILL (Z.)

GENITO URINARY SURGERY

ADRENAL, KIDNEY AND URETER

Itanem, H. A Case of Bilateral Subacute Suppurative Pneumococcal Paranephritis (Liu Fall vom beklemmender, subakuter stützter Paranephritis pneumococcica) *Wochschr. f. med. Chir.* 9, 2, 21

The author reports a case terminating fatally in which there was moderate fever associated with puffiness of the face, dyspnea, cramp-like abdominal pain, and anuria. Cystoscopic examination showed an obstruction in the left ureter, the right ureter as normal.

Autopsy gelatinous, suppurative inflammation of the capsule was found around both kidneys; there was also pyelonephritis. Pneumococci were the cause of this unusual type of suppuration. The fact that the process ran a insidious course for months was probably due to the nature of the excitant.

Roos (Z)

Reese, N. P. A New Method of Blanking Ureteropyelograms. *Surg. Gynec. & Obst.* 9, 3, 277, 274

The details of the technique described are that it is simple, the ureter is filled from below without disturbance of its natural course by the passage of the catheter and reflux of solution about the catheter is prevented.

A aspirin tube about 5 mm in diameter is placed on the whistle-tip catheter about 1.5 cm from the tip. The catheter is threaded back through the cystoscope in the usual way of passing aspirin tips described by Harris and Huisman, and the instrument is introduced, the catheter with the bulb being passed into the ureter so be studied so that the bulb is held by the bladder wall. The tip of the whistle tip catheter is thus permitted to enter the ureter. The other side is also catheterized, urine being collected from each for study. The patient's shoulders are elevated slightly and a table by 17 X-ray plate is placed under the back so that it inclines downward at an angle of about 15 to 25 degrees. The ureter and pelvis are then gently filled in the usual manner.

If the patient is flat on his back the upper ureter does not fill, probably because after crowing the iliac crest, the fluid flows rapidly to the pelvis and causes the pain of distention, prohibiting further injection. The Trendelenburg position permits the kidney to fall upward and thus disturbs its usual position and does not give true information. After the picture is taken the catheter may be passed up or if the bulb interferes, another catheter may be passed to drain the fluid in place of the opposite one, which may be removed. However the fluid usually flows back more quickly when the catheter is low in the ureter than when the older method is used.

By this technique accurate information regarding structure or kink can be obtained and obscure causes of pain can be located. C. R. O'CONNOR, M.D.

Fullerton, A. Arches and Pains of Renal Origin. *Canadian M. Ass. J.* 19, 3, 222, 23

The author reviewed the records of over 1,500 successive cystoscopies to determine whether the condition of the kidney or ureter or the site of the lesion could be correlated with pain of a particular type or distribution. He found that the most extensive disease of the kidney may not cause any pain whatever and that on the other hand, very slight pathology may be associated with almost unbearable agony, also that the same condition may cause only slight discomfort in one case while in another it causes pain of very severe character radiating to the utmost terminations of the peripheral nerves.

Pressure on the normal kidney produces pain of a sickening character which is less severe but similar to that of pressure on the testis or ovary. The pelvis and ureter are highly sensitive. Distension of the pelvis is definitely painful. Certain reflex phenomena, such as nausea, vomiting, pallor and cold sweats associated with disturbance of the pulse or respiration, commonly accompany the pain in the renal pelvis. In pathologic conditions the sensitivity of the kidney and ureter may be profoundly altered.

Papan and Ambard classify renal pain as follows: (1) that due to mechanical or traumatic causes such as distension of the ureter, pelvis, and calices, distension of the parenchyma in the capsule by congestion or edema of the kidney, the contact of a foreign body with the wall of the pelvis or calices, dragging of the pedicle of the kidney, compression of the nerves (most of the pain, however is reflex or of toxic nature) or sclerosis of the kidney. (2) inflammatory conditions such as lesions of the pelvis and calices, as in pyelonephrosis, lesions of the parenchyma as in pyelonephritis, and lesions of the perirenal cellular tissue as in perinephritis and perinephritic abscess.

Papan and Ambard are of the opinion that renal pain usually arises in the renal pelvis. In cases of caliculi, hydronephrosis, movable kidney, renal tuberculous cancer and renal hamartoma, distension of the ureter is manifested by renal colic due to distension of the pelvis. Pain in the kidney itself is generally of moderate intensity except in case of an inflammatory lesion which it may become very severe.

The fact that the most varied pathologic conditions may give very almost identical symptoms suggest that common sense may be present in all,

namely distension of the renal pelvis is by obstruction. This obstruction may be due to calculus, a kink, a thickened ureter or blood clot. The intensity of the pain is no index whatever of the severity of the lesion, a very slight kink of the ureter may produce more severe pain than an extensive hydronephrosis. The direction of the radiation of the pain is usually toward some portion of the lower extremity but sometimes to the groin, the testis, or labia majora. Not infrequently the pain radiates to the opposite renal region, and occasionally is felt solely on the presumably healthy side. In the so-called Dietl crises the pain may be due to torsion of the pedicle linking of the ureter or dragging upon the pylorus, gall bladder or other abdominal structure. It may be suggestive of an acute abdominal condition with rapidity. A typical attack of renal colic is usually easy to diagnose, but occasionally the urologist will encounter cases in which every examination fails to make the conclusion certain. This suggests that in exceptional cases extra renal conditions may be responsible for colic similar to that arising from renal causes. In many cases the pain of renal origin must be looked upon as referred pain, its distribution not necessarily giving any clue to the location of the lesion in the urinary tract.

Abdominal examination will reveal displacement, deformities, or enlargements of the kidney as well as in the renal region tenderness, rigidity, or areas of hyperesthesia. Rectal or sigmoid examination may locate a calculus in the lower end of the ureter thickening of the ureter tenderness, or other abnormality. Negative urinalyses do not exclude renal disease. A small aseptic tube may be present in the absence of blood, pus, or albumin in the urine. In hydronephrosis the usual tests may show normal urine, and at the time of examination pyonephrosis may be blocked. The X-ray examination if properly done, may reveal alterations in the position, shape and size of the kidney in addition to opacities. Cystoscopy may demonstrate alterations in the shape, size, and surroundings of the ureteral orifices and changes in the rhythm and character of the efflux. Ureteral catheterization will show the character of the urine from each side and any alteration of the relative specific gravities. The divided kidney function test with indigo carmine or phenol sulphophthalein may give valuable information. The ureteral catheter will demonstrate narrowing or patency of the ureter and pyelography will show the shape and size of the pelvis and calices, the presence and relations of foreign bodies, and the position, direction, and caliber of the ureter. If these methods fail to establish a diagnosis an exploratory operation will be necessary.

Renal calculus. In cases of renal calculus the pain is frequent, severe and of varied character. Occasionally it may be due to the passage of crystals of oxalate of calcium. Frequency of urination occurs especially during the attacks of pain and the severe attacks are very frequently characterized by restlessness, pallor and cold sweats.

Renal tuberculosis. In tuberculosis of the kidney pain is not a cardinal symptom. It was present in fewer than half of the author's cases, and these there was usually thickening of the ureter as well as very extensive destruction of the kidney substance. The pain is probably due to obstruction causing intra-pelvic pressure but the chronicity of the disease allows of more gradual distension than that occurring in cases of stone.

Pyelitis. In pyelitis pain is very frequent. The acute cases are characterized usually by gross fever, vomiting, pain and tenderness, and sometimes by palpable swelling of the affected organ and muscular rigidity. The pain is usually more fixed and constant than that occurring in cases of calculus and tuberculosis and not so severe as that due to calculus. It is caused probably by the passage of purulent coagula along the ureter.

Hydronephrosis. In hydronephrosis the conditions are most favorable for the development of renal colic via obstruction and distension of the renal pelvis. A frequent history is that of pain and tumor in the side often associated with vomiting. In some of these cases an anomalous renal artery extends across the ureter like a bow string constricting it and causing obstruction and pain by dilating the renal pelvis. In some cases the pain is of recent development, being due to kinking of the uretero-pelvic junction resulting ultimately from the gradual distention.

Renal tumor. In cases of renal tumor pain may be entirely absent but as present in about 60 per cent of the author's cases. It ranges in character from soreness, dragging pain, or tenderness to very severe renal colic. In most of the latter cases it appeared to be due to blood clot in the pelvis or ureter.

Mobile kidney. Pain is often present in cases of mobile kidney but as this condition is so often associated with other evidences of vasomotorism it is difficult to apportion the responsibility among the various organs. The diagnosis can usually be made by means of pyelography.

Other causes. It must be borne in mind that renal pain may be due to some condition of the bladder or urethra as in cases of obstructive growth or stricture of the urethra. Also to be considered are certain rare conditions such as certain forms of chronic nephritis, infarcts, hydatid cyst in which small cysts or sometimes passed, their cysts of the kidney and horseshoe kidney.

Treatment. The treatment includes, of course removal of the cause when possible, but certain ill-defined renal neuralgias the usual methods are often either insufficient or excessive as Papan and Ambard have pointed out. While decapsulation, nephrotomy and nephropexy sometimes fail to effect a cure nephrectomy is too drastic. Papan and Ambard have suggested resection of the nerves of the kidney. This is done after careful exposure of the renal pedicle and dissection of the vessels.

Major R. H. The Use of Creatinin as Test of Renal Function. *J Am Med Ass* 1933 LXIX, 384

In normal persons and in persons suffering from various diseases a throat renal leucosis the intravenous injection of 0.5 gm of creatinin as followed by an increased excretion of urine in one hour amounting to three times that excreted during the hour preceding the injection. The total excretion at the end of 6 hours amounted to five times that of the hour before the injection.

In chronic nephritis the kidney fails to respond in this manner. In the cases studied the increase was less than 50 per cent. In number no increase was noted. H. A. M. KNOTT M.D.

Barney J. D. Gonococcal Infection of the Kidney. *J Urol* 1933, 17

This article is based upon a case of gonococcal infection of the kidney which is of interest because of the complete pathological and bacteriological study made. According to the author's study in cases of gonococcal infection of the kidney have been reported in the literature but in only four or five was the kidney at died at operation or autopsy.

Before coming under his observation the author's patient had been subjected to an epididymotomy. A cystoscopic examination was made because of pain in his back. Redness and edema of the left ureteral orifice were found. The urine obtained from the left kidney by ureteral catheter showed intra cellular diplococci. Nephrectomy was done. The kidney was about the size of pullet egg. The renal pelvis was thus and greatly dilated. The ureter as normal. Recovery was successful.

HENRY L. KARNOWSKY M.D.

Ball, W. G. Some Cystoscopic Appearances of Tuberculosis of the Urinary Tract. *Bull J Surg* 1933, 315

The purpose of this article is to describe some of the pathologic changes which may be observed in the bladder in cases of genito-urinary tuberculosis.

The author calls attention to the extreme rarity of primary tuberculosis of the bladder. Many writers deny the existence of such a condition and it is generally agreed that in about 80 to 90 per cent of cases of renal tuberculosis the primary focus of infection is in the kidney.

Symptoms indicating an involvement of the kidney are slow development and may be absent altogether even when the kidney has been destroyed. As the first evidence of the disease is often dysuria associated with frequent micturition the latter is recognized the appearance of the condition in the bladder by cystoscopic examination is of great importance in the diagnosis and especially in determining which kidney is affected.

The author uses general anesthetic so long as cystoscopic examination when tuberculosis infection is suspected. He cautions against over distention of the bladder in such cases in order to prevent hemorrhage and irreparable damage such

as the lighting up of latent lesion or the introduction of a secondary infection which might result from even slight trauma.

Excellent illustrations are included in the article to show the various points made in the discussion of the different aspects of renal tuberculosis and to demonstrate the character of the lesion in the early stages of bladder involvement.

The earliest cystoscopic finding is the discharge of blood, pus, or caseous material from one or both ureteral orifices. The author contends that the persistence of hematuria and pyuria observed in the cystoscope as coming from one kidney fully justifies exploration of that kidney.

Broadly speaking, the degree of involvement of the bladder wall is an indication of the extent of the disease of the kidney. Ball does not agree with the general view that patients often exhibit referential symptoms of renal irritation prior to the appearance of bladder lesions. In his own cases he has usually been able to find a change even such as pyelitis begins, although it does not necessarily exhibit the characteristics of a tuberculous lesion. He believes it possible however that lesions of the lower end of the ureter may give rise to referential symptoms in the absence of involvement of the bladder mucosa.

The early and later changes of lesions in the bladder are more or less fully described. One of the most striking illustrations also are those found in the bladder of man complaining of such symptoms who had been subjected to the removal of the right testicle for tuberculous disease several months previously. At the time this picture was made there was hard nodular seminal vesicle under the slit of the ulcer. Attempts to prove that the kidney was infected were negative.

LOWEN F. H. M.D.

Chetwood, C. H. The Treatment of Pyelitis. *J Urol* 1933, 37

This article deals with the treatment of pyelitis with normal saline. Attention is called to the fact that oral salivarian is of no use. Mention is made of work previously done by Necker, Kall, and Remick and their technique is the usual method employed. The solution used is freshly prepared in sterile boiled and distilled water. The average initial dose is 0.5 gm of the drug 5 to 6 times a day according to effect, not from as little as 0.5 gm to much as 0.5 gm. The total intake of doses is usually four. There are no rest intervals. The rest is 6 days.

Ten cases are reported in which this form of treatment proved effective. I. K. CHETWOOD M.D.

Hillemann, F. Experimental Hydroureterosis. The Necessity of Compensatory Hypertrophy and Distal Atrophy to Repair. *J Am Med Ass* 1933

Experiments conducted by the author not only confirmed the fact that renal recovery is complete

istery hypertrophy effect a counterbalance after unilateral nephrectomy but demonstrated also that in unilateral diseases without nephrectomy an additional factor renal competition, is active in the final anatomical readjustment. Activity is just as essential for renal growth as for muscle hypertrophy. Progressive inactivity leads to diffuse renal atrophy. On the other hand, an overwhelming demand for work produces renal inactivity and renal atrophy would be demonstrable in such cases if death did not occur from renal insufficiency.

The significance of renal reserve power and compensatory hypertrophy and of renal competition and atrophy in relation to reparative operations on the kidney is obvious. The poor results of repair procedures in hydronephrosis are not always due to technical failures. Attempts to repair a unilateral hydronephrosis when there is a complete compensatory hypertrophy on the opposite side are always certain to fail, and if the diseased side has been greatly injured or infected or the repair procedure is imperfect, success is not certain even if there is partial compensation on the normal side. In bilateral disease conservative surgery is always indicated and it is necessary to repair the two kidneys with two different operations. The second operation cannot be delayed too long because the initial reparative operation may have placed this kidney in such a favorable condition as to allow it to undergo complete compensatory hypertrophy in which case atrophy will surely result on the unoperated side.

LOUIS KROEMER, M.D.

Watson, E. M. Spontaneous Healing in Destructive Hydronephrosis. Report of Two Cases. *Bull Buffalo Gen Hosp Buffalo* 9 3 8

This article is summarized as follows:
Two cases are reported showing cystoscopic and radiographic evidence of healed renal disease with reduced renal function and absence of active infection. Both cases give history of severe illness in earlier life which may have been complicated by acute renal infection. The evidence of healing suggests spontaneous healing of renal infection in both cases, with permanently reduced renal function and fibrotic changes in the kidney structure indicating process of repair.

GILBERT J. THOMAS, M.D.

Krommeier, O. F. A. Hilbert. Unrecognized Mode of Origin of Congenital Renal Cysts. *Surg Gynec & Obst* 9 3, xxxvi, 304

To determine the cause of congenital renal cysts the author made a microscopic study of the embryological development of the kidney of human fetuses. He found that in fetal life there is normally at first characterized by the presence of merous cystic renal tubules. This normal process is converted into a pathologic condition if the tubules do not grow at the proper time and continue to grow to the detriment of the adjacent normal structures.

THOMAS F. FINER, M.D.

Crawford R. H. Polycystic Kidney. *Surg Gynec & Obst* 9 3, xxxvi, 85

In a case of bilateral cystic kidney the author discovered hereditary tendency. The patient had three sons and four daughters; one was found to have a polycystic kidney on exploratory examination but is still alive; three of the seven died of uremia due to polycystic kidney. In the patient's family, in which there were nine children, eight are living but all have small palpable kidney tumors. Three of the latter have had kidney operations. The author's patient died from uremia following drainage of the cysts.

Polycystic kidney is congenital and practically always bilateral. It rarely plays an important rôle. Nephrectomy is not indicated, even though one kidney appears normal, because the remaining kidney almost invariably becomes cystic.

THOMAS F. FINER, M.D.

Kretschmer, H. L. Echinococcus Disease of the Kidney. *Surg Gynec & Obst* 9 3, xxxvi, 96

Echinococcus infection confined entirely to the kidney is rare. In the literature of the United States and Canada Kretschmer was able to find only seven cases of echinococcus within the kidney in all time.

The case reported in this article was that of a male Greek 30 years of age who complained of pain in the region of the right kidney, frequency of urination, pain on urination, hematuria, and loss of weight. These symptoms began one year ago with an attack of hematuria lasting two weeks. Ten days after this attack he passed a small round body the size of a pea which he described as soft and containing small particles of gravel. Two weeks after the first attack when he had a second attack, but there had been none since then. During the year he had had at least six attacks lasting for several days.

Kidney and bladder cultures were negative. Phenolsulphonaphthalein appeared six and one-half minutes on the right side and six minutes on the left. The kidneys were not palpable or tender. There was an eosinophilia of 8 per cent. The roentgen examination showed a shadow near the upper pole of the right kidney. At operation this proved to be an area of calcification. When the right kidney was exposed its upper half as found to be occupied by a firm mass 30 cm. in diameter which contained many small cysts. Nephrectomy was done.

Ten months after the operation an echinococcus fixation test in human cyst fluid was negative. The treatment of choice is nephrectomy.

THOMAS F. FINER, M.D.

Cumming, R. F. Leucoplakia of the Renal Pelvis. *Surg Gynec & Obst* 9 3, xxxvi, 89

Leucoplakia of the renal pelvis is rare. The bladder is more frequently involved; however, the condition is readily recognized by means of the cystoscope.

The normal transitional epithelium is replaced by stratified squamous epithelium showing various degrees of keratinization.

The etiology has not been established. Syphilis and alcohol have a relation to leukoplakia in other parts of the body but are not related to its renal phase.

The symptoms are those of related conditions and, in addition, the painless passage of epithelial membrane.

Nephrectomy is advised for advanced cases. In the case reported in this article the entire renal pelvis was lined by a dry scaly substance resembling brain.

Thomas F. Fittow, M.D.

Stevens, W. E. The Diagnosis and Treatment of Malignant Tumors of the Kidney. *California Med J* 9:221-22

Hematuria, pain, and a palpable tumor are generally recognized as the three cardinal signs of malignant tumor of the kidney. To these fourth should be added, viz a characteristic deformity of the renal pelvis revealed by pyelography. In a review of 43 cases of malignant kidney tumors reported in the literature Stevens found that hematuria, pain, and enlargement of the kidney were present at the time of examination only 44 per cent but pyelography revealed deformity of the kidney pelvis or calices in almost every instance in which it was used.

Deformities revealed in the pyelogram such as narrowing or displacement of the pelvis with or without elongation and narrowing of the calices are almost always characteristic of renal tumor. Visualization of the gastro-intestinal tract by air inflation or by barium meals or enemas is often of great assistance in determining the location of an abdominal mass. Other aids in the diagnosis are the occasional presence of neoplastic cells in the urine and the profuse bleeding which sometimes follows the traumatism caused by the ureteral catheter.

The diagnosis of the histologic type of a malignant tumor of the kidney is sometimes impossible but in many cases can be made from careful study of the symptoms together with the cystoscopic and roentgenographic findings.

As the prognosis of all malignant tumors is practically hopeless without operation, the kidney should be removed in almost every instance unless definite metastases are found. Occasionally the liver and adrenals are of the same nature. If the fully capsulated kidney should be removed with the kidney. This necessarily includes removal of the suprarenal capsule. The lumbar or extraperitoneal route is preferable for the removal of small or medium sized tumors and the abdominal route for the removal of large growths. In all operations the renal vein should be ligated as far as possible from the kidney. Early ligation prevents the entrance of the malignant cells into the general circulation following the manipulation of the kidney. In cases of papillary epithelioma of the renal pelvis the entire ureter should be removed with the kidney as rule since involvement of the ureter almost always later if it is not already present.

Loewen, Gern, M.D.

II. bauer F. The Operative Treatment of Cystic Dilatation of the Vesical End of the Ureter (Zur operativen Behandlung des Ureterischen Pericystes nach der ersten Entleerung). *Zentralblatt für Chirurgie* 19:33-35

After a detailed description of the disease picture of cystic dilatation of the vesical end of the ureter Haeberle reports a case in which Bardeleben performed an operation consisting of the insertion of ureteral catheter, suprapubic cystotomy longitudinal splitting of the cystic ureter over the catheter removal of the resulting flap of mucosa in situ, and suture of the ureteral and vesical mucosa. Recovery followed.

Endovesical treatment by slitting externalization, or thermocoagulation comes up for consideration in cases of small, thin walled dilatations without complications in the bladder or the upper urinary passages but in cases of larger dilatations, infection, nephrothiasis and retrothiasis, the transvesical procedure is necessary. The article is supplemented by a bibliography. *Vierteljahrsschrift* 12

Herrman, L. Accidental Bilateral Occlusion of the Ureters. *J Urol* 9:12, 51

The case reported was that of a woman 31 years of age who was subjected to supravaginal hysterectomy for chronic tubo-ovarian inflammation with pelvic peritonitis. Forty eight hours after the operation examination showed marked changes. Both ureteral openings, the absence of urine in the bladder and obstruction of both ureters in addition their vesical openings. The pelvis was immediately explored. The ureters were located on the pelvic wall lateral to the stump of the uterus. The left ureter was dilated to the size of the little finger. On following this ureter toward the bladder a obstruction due to an encircling cystic ligature was found. This ligature was cut and through minute incision made to the ureter probe as passed into the bladder demonstrated the patency of the lower segment of the tube. The right ureter which was dilated to the size of the index finger, exhibited active peristaltic and reversed peristaltic waves which gave it peculiar snake like action. Through minute incision probe detected a obstruction due to one ligature and an inch below this a second obstruction due to another ligature. Ureteral catheters were left in position for drainage. During recovery there was no leakage of urine from the incisions in the ureter. Three months later the urine as normal and sterile catheters passed easily through pelvis and there was no evidence of renal or ureteral dilatation.

From review of the literature it is evident that bilateral ureteral occlusion is rare. The author has collected and tabulated twenty four cases. In sixteen cases (66.7 per cent) the occlusion was due to encircling ligatures and in ten the ureter were kinked and completely obstructed by the traction of ligatures. In thirteen cases the ureters were completely obstructed by pelvic adhesions following the

application of the Percy cautery and in two they were caught in vaginal clamps.

In bilateral cases anuria is usually the only symptom referable to the ureteral injury during the early stages of the obstruction but the patient may avoid urea that, as in the bladder prior to the injury. The time at which the symptoms of uremia appear is fairly variable but is of no diagnostic importance as the ureteral injury should be recognized long before their development.

The obstructed ureter has little tendency to open without operation, and no instance of bilateral occlusion relieved spontaneously has been found in the literature. Temporary occlusion due to clamping is usually followed by fistula formation.

The choice of operative or other treatment for the relief of bilateral ureteral obstruction will depend upon the cause of the obstruction, the preference of the operator and possibly to some extent the time interval since the receipt of the injury.

The author gives a statistical analysis of the various operative procedures which have been employed and concludes that deligation is the procedure of choice. The objection to deligation based on technical grounds is not well founded. Its advantages are: (1) a lower mortality than nephrostomy (5 per cent as compared with 50 per cent); (2) better final results (complete cure in 75 per cent of the cases as compared with cure in 50 per cent).

The article contains brief case histories and statistical tables.

H. A. FOWLER, M.D.

Barney J. D. Observations on the Kinks of the Ureter. *J. Urol.* 9:3, 18.

Barney has recently observed five cases presenting symptoms of renal or ureteral calculus in which definite kink of the ureter was demonstrated by the ureterogram as the cause of the symptoms. Operation in four cases corrected this condition as followed by complete relief both of the ureteral deformity and the associated symptoms. The early cases are reported in some detail with roentgenograms made before and after operation.

In the second case the ureter showed no abnormality when the catheter was in the kidney, but the ureterogram made when the catheter was pulled off down showed a very tortuous ureter with a marked S-shaped curve at point opposite the lower pole of the kidney. At operation this kink was reproduced by injection of the ureter through a catheter previously placed. The deformity could be corrected by lifting the lower pole of the kidney outward. A modified suspension operation was done using the capsule as hammock. A ureterogram made subsequently showed the ureter to be normal.

The patient has remained free from symptoms. Barney concludes that these few cases demonstrate beyond any reasonable doubt that kinks or sharp and abnormal curves of the ureter may develop in the male or female on either side and in any portion of the ureter but usually occur in its upper third. Such kinks can be demonstrated only

in ureterograms with the catheter lying low down in the ureter when the catheter is high it acts as a splint and obliterates the kink. These abnormalities are probably caused by two factors, namely, due mobility of the kidney and lack of support of the ureter as regards lateral motion due to weakness or herniation of its normal sheath.

When the condition has been present for a considerable time (years) hydronephrosis of greater or less degree often without infection is to be expected. In the early stages the kink is not fixed in its position and there is no accompanying dilatation of the renal pelvis. The symptoms are identical with those produced by renal or ureteral calculus. It is probable that permanent alterations in the course of the ureter are induced sooner, later by infection. Because of this and because the continuance of the condition must invariably give rise to hydronephrosis, early operation should be advised.

H. A. FOWLER, M.D.

Hunner G. L. Conservative Renal Surgery Associated with Ureteral Structure Work. *J. Urol.* 9:3, 97.

More general recognition of ureteral structure as one of the most common intra-abdominal or intrapelvic lesions would obviate much unnecessary abdominal and pelvic surgery. Free kidney drainage through the dilatation of ureteral strictures will relieve number of varied conditions such as migraine and gastro-intestinal disturbances which defy all other methods of treatment.

Large hydronephroses sometimes even those which are infected may be cured by simple dilatation of ureteral stricture and adequate renal drainage. Structure of the ureter may be present even though No. 5 or 6 renal catheter reveal no obstruction. Therefore catheters Nos. 7, 8 and 9 should be used. The pyelo-ureterogram also may fail to give the necessary information.

There are three types of cases of hydronephrosis due to ureteral stricture: (1) those showing equal dilatation of the upper ureter and renal pelvis and an apparent angle in the ureter a few centimeters below the kidney; (2) those with apparently straight ureter which enters the kidney pelvis abruptly near its lower border where shadow-graph fluid is trapped in the kidney; and (3) those showing fusiform dilatation of the ureter above the stricture area and a relative greater dilatation of the pelvis the ureter tending to prolapse with the kidney.

Salt solution should be used, the first instillation of the renal pelvis it will not cure severe retention if trapped. I accept the cases of nervous patients who have drunk large quantity of water hydronephrosis would be suspected if the urine flows through the catheter steadily stream. A change of position will sometimes fail or drainage shadow-graph fluid should be drained off before the patient returned to bed. Overfilling of the renal pelvis is dangerous. A low functioning hydro-

By dissecting off part of the bladder wall and using the prepuce, a closure may be perfected which will permit the wearing of a urinary receptacle rendering the patient reasonably comfortable. The mortality of this procedure is zero.

In the author's case the testicles were erythematous, he turned up a large flap of scrotum to cover the defect and brought the penis through a perforation in the flap. A urinary cup was then used.

KELLOGG SMITH, M.D.

Greenberg H. L. A Review of 153 Cases of Bladder Stones Removed by Lithotripsy. *Urological Med.* 1932, 17, 77.

The contra-indications for lithotripsy are:
1. A stone so large that the jaws of a lithotrite will not embrace it.

2. A stone so nearly filling a contracted or diseased bladder that the lithotrite jaws cannot be opened.

3. Prostatic hypertrophy, vesical tumor, diverticulum, or complications which would necessitate cystostomy following the removal of the stone. Occasionally moderate degrees of prostatic hypertrophy may be relieved by an irritating stone.

4. The presence of a stone with a nucleus of such a physical character that it cannot readily be freed from the lithotrite. Fragments of catheters, wax, and gum bougies occasionally become the nucleus of bladder stones.

5. Cases in which the stone is attached to the wall of the bladder and those in which previous operation has been performed on the bladder or the adjacent structures.

6. Stones with sharp foreign body such as a karpus or knife blade, as a nucleus unless the cystoscope shows them to be free in the bladder.

Of 666 cases of vesical calculus examined at the Mayo Clinic a diagnosis of stone was made by means of the roentgen ray in 345 of 440 (78.2 per cent) and by cystoscopic examination in 415 of 435 (95.4 per cent). A positive diagnosis of stone was made by roentgen-ray or cystoscopic examination in both in 537 cases (80.6 per cent).

With regard to the prevention of recurrence of bladder stones the author makes the following statements:

1. Roentgen ray and cystoscopic examinations must be made after litholapaxy to be sure that all fragments are removed.

2. Infected kidneys should be treated by pelvis lavage or nephrectomy if necessary, and focal infections should be removed.

3. Stones in the kidney should be removed.

4. Cystitis should be relieved by lavage and topical applications.

5. Causes of retention such as enlargement of the prostate or stricture must be removed if possible. If they cannot be removed, as is the case in the stricture bladder the regular removal of residual urine should be practiced.

6. Diverticula retaining urine should be removed.

7. Hygienic and dietetic measures benefiting the general health should be adopted.

The use of caudal anesthesia greatly increases the scope of litholapaxy. It is essential to remember that the sacral nerves innervate not only the urethra and prostatic area but also the musculature of the bladder. Consequently some type of suction apparatus is necessary to remove the fragments of stone as the paralyzed bladder is unable to expel them.

Kidd, F. The Treatment of Epithelial Tumors of the Urinary Bladder. *Chicago Med. Rec.* 9, 3, 27.

In this most interesting and illuminating article based on a consideration of 63 cases personally observed and treated Kidd discusses most minutely the symptoms and the various operative methods employed.

If the case is seen early diathermy or a well designed operation may remove all of the local growth. In cases of painless haematuria immediate cystoscopy is indicated.

Kidd has come to the conclusion that some bladder cancers have a tendency to develop papillomatous which is inherent in the entire epithelial membrane. The neoplasms in such cases being entirely new tumors rather than recurrences.

Seventy of every 100 persons with painless haematuria are suffering from a tumor of the bladder or kidney.

Occasionally two other symptoms are met with: (1) pulled ureter or pain in one kidney, caused by the pulling of the tumor on the ureter or blocking it, and (2) the corked urethra, indicated by intermittent interruption of the stream of urine when the tumor becomes caught in the entrance of the deep urethra.

Of eighty patients who came early enough for diathermy or partial cystectomy, forty-one or more than half, are known to be alive and well, one has lived eleven years, and many for seven or eight years. It is probable that fifty-five are alive and well.

With regard to the differential diagnosis between simple and malignant papilloma the author states that he does not approve of removing portions of bladder growths with an operating cystoscope for microscopic study. The risks and inconveniences in such a course outweigh any possible advantage to be gained. In a number of cases the snipping off of portions of living tumor within the bladder is sure to result in the implantation of fresh tumors on other portions of the bladder wall. The determination as to whether the growth is malignant or benign must be made on the basis of clinical findings if the best results are to be obtained.

Special attention is directed to the length of the history, the size and appearance of the tumor, the delicacy and length of the fibrous and the pedicle, the appearance of the bladder in the region of the pedicle, the singleness or multiplicity of the tumors, the feel of the base of the bladder through the rectum.

or vagina. In some cases, the reaction of the tumor to diathermy. Some tumors which look malignant react at once to diathermy while others which appear innocent prove refractory and even though requiring an open operation the latter react as malignant.

Of 11 entirely new cases traced by the author up to 1922 all others show no signs of any recurrence one in 3 yrs, three eight 3 yrs one six 3 yrs, five 3 yrs, four 5 yrs, none four 3 yrs since treatment. It appears, therefore, that treatment by diathermy gives far more permanent results than the old open operation. In 10 recurrences the old open operation. In 10 of the 11 cases there was recurrence six 3 yrs and 1 3 yrs respectively after the treatment the patient was then subjected to an open operation and in 10 were all cured. The result given patients, however, need for a year or more remained quite free from recurrence. It is justifiable to assume that they were cured. These patients can be considered by other than those usually showing simple papillomata. The oldest man of 71 has remained well for 3 yrs since treatment. The youngest was 21 years.

If a papilloma is seen to be lying high up on the upper all of the bladder, just to the peritoneal surface, care must be taken with regard to the severity of the treatment when the pedicle has been buried and exposed. In such cases it is safer not to use a snare but in order that the patient's feelings may serve as a guide to the severity of the burning or electrocauterization.

Kidney allow an interval of at least three weeks, and not more than four weeks, between the treatments giving time for all slough to separate. It is not enough time for a fresh growth to occur. In this he does not agree with Beer who carries out the treatment every seven days. After apparent cure the patient should be urged to report at least once a year for cystoscopic examination. A very early recurrence two small masses of hematuria, can be destroyed with one treatment.

Kidd had a new machine designed which is used with constant current of either 20 or 40 volts, and gives a most gradation of current from 0 up to at least 5 amperes or more. The spark gap is of remarkable consistency and can be employed continuously for fifteen minutes at a time without over heating. With this machine it is very low amperage each application of current at very low amperage and gradually increase it to the maximum, so that maximum of true diathermy heating and consequent coagulation of the deeper parts of the tumor is obtained without charring or gassing on the surface of the tumor.

The author's conclusions are as follows:
1. In cases of papilloma of the bladder of a benign type diathermy as applied through the cystoscope holds out an excellent chance of cure without the risk of opening the bladder. To open the bladder and strip out well tumors should therefore be considered a grave surgical recommendation.

2. In cases of papilloma of the bladder of doubtful malignancy it is possible for an expert to obtain a certain number of cures by means of diathermy through the cystoscope. Nevertheless if diathermy fails to bring an adequate destructive reaction in the tumor after three treatments, the most it should be given up and total extirpation should be carried out.

3. In cases of malignant papilloma, early papillectomy is essential and even very early whetting of the edges of the bladder or total or partial cystectomy is decided and necessary. It should be carried out by the old open operation, except in a few isolated cases. It is an operation of considerable technical difficulty and presents a definite risk, but when successful it lends a higher percentage of true cures than the other type of operation as it is carried out on a former path of escape for the tumor. All cases of partial cystectomy should be followed up at regular intervals by means of cystoscopic examination.

4. Total extirpation has been rendered almost obsolete by partial cystectomy diathermy and is done but rarely. It should be reserved for cases of multiple or giant papillomata which defy other treatment and for a few inoperable cases of carcinoma involving both ureteral orifices.

5. Utererectomy presents almost great risk in total cystectomy. When successful, it is a great help. In a few favorable cases it may be used as preliminary to total cystectomy.

6. Radium has not yet justified its substitution for surgery but deserves the closest consideration. The present state of knowledge it has already replaced total extirpation, that is to say, for cases in which cystectomy would have been considered formerly. Now prefer to use radium treatment, combined perhaps with open cauterization and deep roentgen ray therapy. We should cease to remain content with simply draining or leaving alone so-called inoperable cases. The bladder should be opened and one of its corners pursued, either open diathermy or ligature combined with the implantation of radium emanation glass tubes followed by deep roentgen ray therapy and the cystoscopic application of radium and diathermy.

LOUIS GEORGE WOOD

W. J. G. A. D. Fulguration in the Treatment of Affections of the Lower Genito-Urinary Tract. *Arch. de Surg. M.* 1922, 1, 111, 6.

The unipolar fluid current is safest for fulguration because of its limited power of penetration. The Bourget operating cystoscope is the best instrument in the deep urethra as an instrument without heat should be used. The high frequency current is a true destructive agent of the desired power which acts through carbonization or electrocoagulation.

If pain is experienced in a large bladder tumor is being treated the application in that area should be stopped for the sitting in cases of smaller

tumor, few seconds of intermittent pain are to be expected. Primary hemorrhage is rare. The patient should be forewarned that secondary hemorrhage may occur eight to ten days after the treatment. Coenocaulis pyramis, which is usually present, is often aggravated by fulguration. For this acridillavine is suitable. Retention of urine resulting from the action on the urethral sphincter should be anticipated and, if necessary, drainage by means of a permanent stiff catheter should be established for twenty-four hours. In order to prevent perforation of the bladder the attack should be made from the periphery of the tumor to its base and the treatment should be stopped when the approach to normal tissue is indicated by pain.

The destruction of benign papillary tumors of the bladder is definite and devoid of danger. As the tumor is still small, one or two treatments are usually sufficient. The patient is not confined to bed and an extensive operation is rendered unnecessary. Malignant tumors do not respond to this treatment, a fact of importance in the differential diagnosis.

Chronic conditions of the deep urethra and vesical neck, such as granulomata, sessile polypoid masses, and true polyps, with concomitant infection of the adjacent structures are amenable to fulguration, and certain cases of prostatic hypertrophy or median lobe enlargement respond to tunneling of the obstruction with the active diathermic electrode with or without the use of Young's punch.

LOUIS NEWELL, M.D.

Cabot, J. A. G. An Unusual Case of Traumatic Urethral Stricture. *J. Am. M. A.* 92, 1907, 307.

The aim of all operative work on the urethra should be the complete restoration of function with a minimum of scar tissue. Cicatricial contraction along the course of the urethra is very difficult to prevent and the chief cause of disappointing results.

In cases of recent injury of the urethra prompt operative interference should be undertaken to control the spread of extravasation. An attempt should be made to repair the rupture and ample drainage should be provided. The after-care demands constant and painstaking attention if the formation of excessive scar tissue, which often leads to dense structures, is to be prevented. Infection must be actively combated, and every effort made to establish normal flow of urine through the urethra and prevent the formation of a persistent penile fistula.

In cases of long standing traumatic stricture the urethra will be impermeable. Therefore the operator must be guided in his choice of procedure entirely by the operative findings. The author reports the case of a man who was injured 10 years previously by a telephone pole which fell upon him. The right ischioepubic ramus was broken and the perineum severely injured. At the time of the accident an external urethrotomy was done and the bladder

drained by perineal tube. Ten years later an external urethrotomy was done on account of a persistent perineal fistula and complete urinary incontinence. The fistula closed temporarily but the incontinence continued and later the fistula reopened. Examination of this case then showed broad scars in the perineum with a fistula in the center. Rectal examination revealed marked adhesions and infiltrations about the membranous urethra and the apex of the prostate. A catheter, as passed into the bladder with difficulty. The residual urine amounted to 300 ccm. The X-ray showed large dilated bladder in which the opaque fluid regurgitated into the posterior and anterior urethra. While the patient stood up the fluid dribbled out of the urethra. Cystoscopic examination showed that the internal sphincter had been torn completely through to the right side.

Two operations were performed, about seven months apart. The on-lesion was somewhat tomy, but perfect functional results were obtained. The patient left the hospital the twenty-fourth day after the second operation. All wounds were firmly closed and good stream of urine was voided at normal intervals. Three months later the patient reported that he was still well and had taken up his former work.

JOHN P. O'NEIL, M.D.

GENITAL ORGANS

Barney, J. D., Haines, E. F. and Shedden, W. M. Some Results of Prostatectomy. *Chicago U. Rec.* 9, 3, 1914, 554.

The authors have undertaken to trace all the cases of obstructing prostate discharged from the Genitourinary Clinic at the Massachusetts General Hospital. They believe that the results of prostatectomy are too seldom recorded and wish to contribute to the knowledge of what ultimately happens to the prostatectomized patient. Their conclusions are as follows:

1. Persons with an obstructing prostate may live in comparative comfort for several years with the operation.

Cancer of the prostate, whether operated on or not, may not interfere with the general health and activity for a number of years.

3. While the median perineal operation is frequently followed by extremely satisfactory results, it may and often does result otherwise and its outcome is not so dependable as that of the suprapubic operation.

4. Incontinence of urine, more or less complete, may follow the suprapubic operation, but is less frequent after this procedure than after the perineal operation. Unless the incontinence is very definite and well marked, it may be, and often is, mistaken for marked urgency.

5. The urine eventually becomes free from infection in nearly half the cases.

6. Cloudy urine does not always indicate renal infection; the bladder alone may be involved.

7 The suprapubic wound gives rise to hernia in but a very small percentage of cases, almost all of them those of men who are doing hard physical work.

8 The general health of the patient is generally much improved following prostatectomy.

9 The size of the urethra gradually decreases after operation, but if part of this the urethra may be uninfected, there may be no residual urine and the patient may have no subjective symptoms whatever.

The open prostatectomy test shows decrease in the number of milligram per cent creatinine excreted from the kidneys being due to better drainage of the kidney and improvement in the general condition.

10 On the whole prostatectomy causes no appreciable change in the sex function.

LOREN GENSLER, M.D.

MISCELLANEOUS

Osborne E. D., Sutherland C. G., Scholl, A. J., and Reinwein L. G. Roentgenography of the Urinary Tract During the Excretion of Sodium Iodide. *J. Am. Med. Ass.* 9: 1113.

After its introduction into the body sodium iodide, which is opaque to the roentgen rays, is normally excreted in the urine. Under certain conditions sufficient amounts of sodium may be present in the urinary tract to cast a roentgen shadow. The sodium iodide is given either intravenously or by mouth.

Isotonic sodium iodide. The patient first receives 1 gm. of sodium iodide by mouth three times a day for 3 days in order to determine whether there is any reaction to the drug. If no symptoms of acute iodism occur the intravenous injection of 1 per cent solution is begun on the third day. Various dosages have been employed ranging from 5 to 20 gm. of 1 per cent solution of chemically pure sodium iodide. 10 mg. causes a dose of 1 gm. to be given without causing outward symptoms provided the solution is injected slowly. When a dose of more than 1 gm. is given, symptoms appear probably because of osmotic changes resulting from large amount of the 1 per cent salt solution.

Satisfactory roentgenograms of the bladder are secured in practically every case with doses of from 5 to 20 gm. given intravenously. 1 gram intravenously doses of sodium iodide gave fair roentgenograms of the kidneys, ureters and approximately 50 per cent of the cases. The best roentgenograms of the upper urinary tract are obtained with doses of from 15 to 20 gm.

The time factor is important. The roentgenograms should be taken one half hour, one hour and two to three hours after doses of 5, 10, and 20 gm. respectively.

Isotonic sodium iodide by mouth. The best results by this method are obtained by administering 3 gm. of sodium iodide hourly for three hours and taking

the roentgenogram from one to two hours after the last dose.

If it is desired that one is to be at bed, the administration of from 3 to 5 gm. of sodium iodide without previous preparation is all that is necessary. The roentgenograms are taken three hours after the highest amount of the drug.

Preliminary control roentgenograms are taken before the administration of the sodium iodide. A medium to standard Coolidge tube was used. The Kodak film 3 in. and an air distance of 67.5 cm. from the target to the plate. The time used from two to eight seconds according to the thickness of the patient.

Kayser L. D. The Mechanism of the Formation of Urinary Calculi. *Ann. Surg.* 9: 1111.

Urinary calculi result from an abnormal type of crystalline precipitation. Normal urine holds water insoluble crystalline in solution because of the presence of protective colloids. The hydrogen ion concentration has effect on time but is of secondary importance. Kayser and his coworkers showed that colloidal matter in solution modifies the morphology of crystalline precipitates sometimes changing them from microscopical to a coarser type.

The theoretical study of stone formation by the feeding of animals according to the method of Hulten and Kayser suggested that stone formation may be due to (1) the excretion of excessive amount of crystalline matter beyond the power of the urinary colloid to maintain either solution or deposition of isolated single crystal; (2) deficiency in the amount of protective colloid in the urine or (3) the precipitation of normal colloid or interference in their protective activity by bacterial exudates or foreign colloidal matter present as the result of an abnormal metabolism.

The first mechanism of stone formation is experimentally demonstrated by concentrating calcium salts in the urine by repeated abstinences and injections of normal bovine serum and calcium chloride over a period of days. A uric acid calculus is produced and its increasing increase in the morphology of the calculus to crystal changes from microscopical to fusiform spheroidal form and calculus formation takes place the process being tentative.

The second mechanism namely, the production of deficiency of protective colloid in the urine of animals, has thus far been baffling. However, Licht has precipitated phosphates and oxalates from urine merely by the extraction of colloidal matter. Sheep specimens in which stones are formed *in situ* by killing fibrinogen in the presence of freshly precipitated phosphates, oxalates and carbonates. Licht also cited as indicating the significance of colloidal factors in stone formation.

The third mechanism namely, interference in the normal protective colloids by bacterial exudates or other foreign colloidal matter has been more

positively demonstrated. Sodium oxalate fed to rabbits produced oxaluria of the octahedron type. Direct infection of the kidneys of animals thus fed by means of attenuated coliform bacilli was accompanied by the change of the oxalate crystals to the coalescent spheroidal variety. In several instances fusion of crystals took place with the formation of minute calculi. The author cites the experiments of Revenow and Messner in which calculi were produced by implanting streptococci from the urine of patients with active calculus formation into the devitalized teeth of dogs. These results are explained by the assumption that the bacteria have

specific activity and produce an exudate bringing into the urinary stream foreign colloidal matter which so interferes with the normal colloidal balance of the urine that the deposition of fusing crystals takes place, stone formation occurring as the result.

The author reports the case of a patient who had passed multiple valvate calculi over a period of years and whose urine, when he entered the Navy Clinic, showed atypical fusing spheroids of struvite.

Tennant C. E. Cystin Calculi: A Complex Surgical Problem. Report of a Case of Multiple Cystin Calculi. *J. Am. Med. Ass.* 9:3 1922:305

Cystin calculi are comparatively rare. Up to 55 only fifty cases of cystinuria had been reported and

in 1916 Kretschmer found the reports of only 7 cases of cystinurias including that of his own, those of 1 in boy.

W. L. and Cunningham report one case of cystin calculus in thirty years of cystinuria. Morris two in six, seven and Thompson three in 14. That cystinuria is constitutional problem and the cause of cystin calculus is well known. According to Abderhalden the metabolism in these cases is almost normal. The stones may be multiple and located in several portions of the urinary tract at the same time. Cystinuria tends to be familial condition of which there have been compiled by Roland ten occurred in 15 families.

The author reports the case of a married 22 years who referred to him with diagnosis of cut pyelodinitis and provisional diagnosis of cystinuria. At operation moderately inflamed pyelitis as found. In addition the pyelodectomy the stones were removed from the right ureter through an transperitoneal opening. Another unusually large stone was found below the pelvis of the kidney but no further operation was done at this time. The total weight of the stones removed

4 gm.
A subsequent X-ray examination revealed one stone in the left kidney and two in the right. Later both kidneys were operated upon at different times, all stones being removed. The patient made normal recovery.

JOHN F. O'NEILL, M.D.

SURGERY OF THE EYE AND EAR

EYE

Whitman L. B. Pulsating Exophthalmos. *Am J Oph* 4 23 14

Seven cases of pulsating exophthalmos have been the subject of three recent reports. They were observed by Whitman of the college. In four of the cases the internal carotid artery was ligated months before the tumor appeared. In the exophthalmos present the vessels being ligated in the internal carotid artery at the internal carotid artery. In the cases where the tumor appeared over the internal carotid artery. The seven patients died of influenza without having had any operative treatment. In all the cases the distal carotid symptom disappeared after the ligation. In the three cases of 20 to 25 in two to 70 in one to 200.

The literature on this subject is well reviewed especially by Miller and the monograph of de Scheldt and Hoffman. While many cases have been given to the disease by de Scheldt, it is not clear that the internal carotid artery is the cause of the exophthalmos. In the cases where the internal carotid artery is ligated, the exophthalmos is not relieved until some time after the injury. In the cases where the internal carotid artery is ligated, the exophthalmos is not relieved until some time after the injury.

Proptosis, pulsation (throb) of the eyeball, and bruit are the cardinal symptoms. The vision may be retained by optic neuritis and trophy or may remain perfect.

The treatment of these cases is well reviewed all methods being mentioned from simple pressure on the carotid to ligation followed by the internal carotid artery.

In conclusion the author states that ligation of the internal carotid artery offers the best result in pulsating exophthalmos from a true communication between the internal carotid and the external carotid arteries, but recommends that the distal carotid artery be prepared by daily compression weeks prior to the ligation. Ligation of the ophthalmic artery should then be done before other carotid ligations. (Vernon Wescott M.D.)

Arnall W. B. An Experience with Foreign Bodies in the Eyeball. *J Iowa State M Soc* 93 July 14

Three cases of injury to the globe by small pieces of steel are reported by Arnall. In each case the first roentgenogram was negative. Although ophthalmoscopic examination revealed the foreign body in the fundus. Second roentgenograms in each case also showed the foreign body. Removal of the steel was

accomplished by detachment of the retina and loss of vision. Attention is called to the fact that orbital roentgenograms and roentgenograms of the sinuses should be made to determine the presence of small foreign bodies in the eye. (Vernon Wescott M.D.)

Chamberlain W. B. The Endonasal Operation on the Lachrymal Sac. *J Ind an State M Soc* 93 July 14

In 1917 when the author reported eight cases of endonasal operation on the lachrymal sac with one failure. In the operated portion cases, the endonasal operation for the restoration of physiological function is concerned, though not if there is freedom of the sac. Secondary operations were performed on three cases.

The technique employed was that of West with slight modification.

After preliminary nasal examination and incision with the pericardial sac containing a small amount of the drainage, a three-sided incision is made. The first two incisions are parallel with the floor of the nose and extend as far as possible from the upper part of the upper from the point of attachment of the middle turbinate and the lower from the point opposite the free border of the middle turbinate. For these incisions the right angled forceps of Freer is employed. The anterior ends of the incisions are joined by the incision made as a form of possible drainage downward the nose. The flap formed is elevated submucosally, the pericardial sac being of course isolated and deflected backward on hinge between the middle turbinate and the upper incision. It is held out of the field during the remainder of the operation by small pledget of cotton.

The posterior lip of the dense ascending process of the superior meatus is then attached with chromic and gauze until the nasal wall of the sac is exposed. It is easily recognized by palpation with probe. Sufficient bone is removed to uncover the sac freely in almost its entire nasal aspect. At this point probe is inserted into the sac through the canaliculus pushing its nasal surface tent-like. It is then torn from the septum. A thin scalpel is then inserted between the probe and the lateral nasal wall the outer or free end of the probe being held by the assistant or turned to the forehead by the point of adhesion. The plaster is then removed. It is possible to resect larger portions of the loose pieces are removed subsequently by means of the small forceps of Greenwald. West dictum that the completion of the operation the probe introduced through the canaliculus into the sac must pass horizontally into the nose strictly adhered. When the submucous flap is replaced its upper half covering the sac is

sected and the lower portion held in position for twenty-four hours by light packing. Subsequently the nose is kept free from crusts until healing takes place. If desired, the sac is irrigated through the canaliculus.

O. M. ROTT, M.D.

Alpert, F. Industrial Eye Injuries. *Ill. St. M. J.* 915, 1914, 45.

Alpert discusses the prevention of industrial eye injuries.

Applicants for positions should be given a thorough ocular examination before they are employed. Both central and peripheral vision should be tested and an examination made for slight strabismic irregularities, opacities, evidences of previous disease in the media and fundus and refractive errors. Permanent record of the findings of such examinations should be kept in case they may be needed as evidence in lawsuits to obtain financial remuneration from the corporation for physical injury. Trachoma and other contagious diseases of the eye may be detected and epidemics averted. If by such examination. In addition it will bring an abnormal eye condition to the employer's attention so that he may obtain proper treatment.

The author discusses in detail the proper lighting of shops. The cost of such lighting he gives as approximately 1/4 of per cent of man's cost.

Most shops have come to realize that goggles are essential. A glass can be placed in goggles to correct a refractive error.

Proper tools and proper protective devices or machines will reduce the number of eye accidents. Most hammering accidents are caused by using tools with barred or mushroomed edges. Dust particles should be removed from machines and from rooms by an exhaust system. Where molten metals are being poured the goggles should be supplemented by leather masks to protect the face and head. Properly tinted glass should be used by persons working in exceedingly bright light such as that due to electric welding and blast furnaces. This will protect the retina from serious injury.

The so-called shop oculist is one of the greatest enemies to eyesight as he attempts to remove foreign bodies from lids and cornea with dirty hands and poor illumination and instrument.

The vapors in certain industries should be carefully removed or diluted as their inhalation frequently causes blindness. These include the vapors of nitro benzene used in the manufacture of aniline dyes, bisulphide of carbon used in vulcanizing rubber, the nicotine in tobacco factories, arsenic, lead, carbon monoxide and wood alcohol.

In conclusion the author states that office employees should be given refraction tests by competent oculist.

T. D. ALLEN, M.D.

Landolt, E. A Study on Strabismus. *Am. J. Ophth.* 972, 1914, 93.

Landolt attacks the question of strabismus from the standpoint of the central nervous system. He

points out that the innervation of convergence is analogous to the innervation of accommodation. Both eyes receive the same nervous impulse. It is not sufficient for the images to be simultaneously formed at the fovea of both eyes (convergence); they must also be well defined (accommodation). The degree of convergence and accommodation is inversely proportional to the distance of the object from the eyes. In hyperopia the same degree of convergence must be accompanied by greater amount of accommodation corresponding to the degree of hypermetropia.

The author objects to the statement that a person squints with the left eye and to the phrase "a left convergent strabismus." He believes it would be better to say "The patient has concomitant convergent strabismus and uses his right eye for fixation." This statement could be in agreement with the etiology of strabismus. He regards amblyopia as the cause rather than the effect of the squint and cites the fact that cataractous eyes do not become amblyopic but have good vision as soon as the cataract is removed. A result of long standing convergent strabismus is limitation of lateral motion especially in the eye which deviates. This is another effect of strabismus.

After proper lenses have been prescribed, the accommodation has been paralyzed, and stereoscopic exercises have been outlined it may be necessary to operate.

For the surgical treatment of convergent, divergent, vertical and paralytic strabismus and for convergent insufficiency the author recommends advancement and condemns tenotomy.

VIRGIN WESCOTT, M.D.

Pickard, R. A Method of Recording Disc Alterations and a Study of the Growth of Normal and Abnormal Disc Cup. *Br. J. Ophth.* 93.

From a study of series of curves and frequency polygons reported in a previous article Pickard concluded that the enlargement of the cup in adult life without symptoms of glaucoma must be considered an effect of pressure and that such cases require careful watching for the development of glaucoma. In this article he outlines his method of drawing and recording the disc and the cup. If inclined to them, he superposes a transparent celluloid plate marked off into 1/10 in squares. Then, by measuring the size of the disc and cup he calculates the percentage of the area of the entire disc occupied by the cup.

In normal cases the enlargement is toward the temporal side. In primary optic atrophy there is cupping. In chronic glaucoma the enlargement of the cup is in all directions, remains conical, and reaches the temporal border first. Cases of glaucoma in which there is small cup are more painful. The drawing of the disc and cup as part of the routine record of eye cases is strongly recommended.

VIRGIN WESCOTT, M.D.

EAR

Smith R. M.: Acute Aural Diseases in Children
The J. C. 1913 2: 215-23

The author urges the careful examination of the ear before an operation is pronounced important and also a routine procedure in cases of pneumonia, infantile typhoid, and the exanthematous especially when there is an apparent relapse because frequently a relapse is caused by inflammation of the middle ear.

Attention is directed to the dangers of neglect of the ear in the early stages, leading to interference with the hearing function and of neglect of the suppurative variety leading to such complications as intracranial infections.

The importance of the function of the drum and, when this does not suffice, the value of the operation is emphasized.
 (J. M. R. M. D.)

Lauer J. F. R. and A. Wright C.: The Operative Correction of Ear Defect by Epithelial Flaps
(Quart. J. Med. Sci. 1913 1: 101-114)

In cases of complete loss of the lobule of the ear a flap which is larger by one third than the desired lobule and eight to ten mm thick is cut from the skin of the neck below the ear. A piece of softened Stent mass the size of the flap is applied between the skin flap and the secondary wound and a compression impression of the wound surface. The Stent impression is then removed in

Thiersch's plastic technique so that the wound surface is on the outside and the outer of the Thiersch flap occupies the position of the impression which will be repeated in the wound cavity. The mass with the covering epithelium is then fitted into the wound cavity and the edges of the graft are sutured to

those of the wound. The Stent mass is removed after two or three weeks when the Thiersch flap has become healed in this way the posterior surface of the new ear lobule and the secondary defect are covered with epidermis. Subsequently only slight cosmetic corrections are necessary.

In the correction of defects of the auricle a cartilage framework from the sixth and seventh costal cartilages is used. This is best shaped somewhat after the fashion so that it will not be injured subsequently, and is then placed in a prepared canal under the skin behind the ear. After three to four weeks when the cartilage has healed to the skin flap with bone of cranial pericranium is introduced through curved incisions at the base line. The Thiersch flap is placed over the bone which has been freed from pericranium. The restoration of the lobule in the manner described, an impression with Stent mass is taken of the newly formed wound cavity. This is the second defect and both surfaces of the new portion of the ear are covered with epithelium. The suitable large flap above and below is then mobilized by incision and after freshening of the wound is sutured into the defect of the ear so that the corresponding portions of the helix and a tubercle are united with the proper part of the auricle.

The entire auricle is also reconstructed with cartilage from the sixth and seventh costal cartilages. The epithelial island under the cartilage flap is applied with thick Stent mass as a projecting mass to be made. This is important, as the shrinkage epithelium draws the new ear backward. If there is doubt as to the position of the flap the flap may be directed free gradually with smaller epithelial flaps at intervals of three or four weeks. The procedure is shown in all illustrations.

(J. M. R. M. D.)

SURGERY OF THE NOSE THROAT AND MOUTH

NOSE

Natanson L. N. and Lipakieroff I. B. Perforation of the Nasal Septum in Cocaine Sniffers (Ueber die Perforation des Septum nasali bei Cocainosnephern) *Med. Anz. St. P.* 9 463

Among eighty-six cocaine sniffers, most of whom were prostitutes, the authors found only three who did not have nasal changes due to the cocaine. In seventy-eight they found perforated septum in two as an ulcer of the septum, and in three healed ulcers. From a careful investigation of sixty cases the following facts were learned:

1. The presence of the perforation was unknown to the patient.

2. In all cases the perforation in only the cartilaginous portion of the septum. There were no other changes. The small perforations were round, the larger ones oval. The edges were undermined. The lumen of the perforation was frequently occluded by an odorless crust.

3. The sense of smell was preserved but at times diminished.

4. In four cases there was sinking of the nasal alarage.

5. The palate, nasopharynx, and larynx presented no changes.

6. Perforations were found even when the drug had been used only a few weeks.

7. The ages of the sniffers ranged from 4 to 35 years.

8. The dose was 15 or 20 gr of cocaine daily, sometimes even more. The sniffing was indulged in from two months to nine years. The average length of time was between two and three years.

9. Of the sixty-two sniffers twenty-five had latent syphilis, five were in the primary or secondary stage and one had tertiary syphilis. The rest were not syphilitic.

The authors do not believe that syphilis was the cause of the perforation. Histologic examination of the peripheral portions of the perforations presented showed destruction of the hyaline cartilage, degenerative changes in the connective tissue, slight lymphoid infiltration of the submucosa, pronounced edema, and narrowing of the blood vessels.

The authors' conclusions are summarized below:

1. In cocaine sniffers, ulceration of the septum develops first and then perforation.

2. The cocaine perforation is localized to the cartilaginous portion of the septum and resembles the perforating ulcer of the septum. When the perforation is large, collapse of the nasal cartilage occurs.

3. Only exceptionally is the use of cocaine harmful.

4. In the diagnosis of perforation of the cartilaginous portion of the septum the possibility that it may be a cocaine perforation should be borne in mind.

5. Cocaine perforations of the septum should be given prominent place in textbooks on rhinology. (Lutner, Z.)

Bakker C. and Oudendal A. J. F. A Rare Chondroma of the Nose (Ein seltene Chondrom der Nase) *Zuckerf. f. d. Rh. d. St.* 9

The case reported by J. J. J. nose of an infant in whom the cartilage of the alar was a tumor of the nasal septum developed and disarranged the entire anterior portion of the nose. This growth measured 6 by 35 by 4 mm. Within it was a necrotic cavity measuring 6 by 3 by 4 mm. The diagnosis was chondroma of the nasal septum.

Histologically the tumor appeared to be divided into two small jets of cartilage separated by connective tissue. The basic substance was sparse hyaline cartilage. Nowhere there was any infiltration of ossification or calcification. In the necrotic foci the connective tissue was partially maintained but showed signs of fresh and old hemorrhage. Signs of chronic inflammation were noted in the connective tissue of the tumor. (Rene, Z.)

Dunham K. and Sklarer, J. H. Sinus Infection and Lung Infections. *J. Radiol.* 9 3

Of 349 patients referred by a blebician, 116 were tuberculous. The authors found 3 percent to be suffering from some other infection. And among these non-tuberculous cases, the primary focus outside the lungs was the rule in the head. This observation has been so constant that in every case present a non-tuberculous lung lesion the authors examine the air sinuses and lungs.

Thus disease may be present without absolutely no symptom referable to the head of which the patient is aware. Of the 349 patients studied all presented pharyngeal signs over the chest. The differential chest diagnosis is made on the basis of roentgenoscopic examination of the chest. When no evidence of cephalomaxillary tuberculosis is found the active focus was sought by most careful and complete pharyngeal and nasal examination.

In cases showing definite symptoms of signs pointing to lung infection differential roentgenologic examination is called for every local and lateral roentgen test is made. Chiefly of the roentgen examination of the chest. The degree of the active focus should be done by roentgen.

The normal lymphatic system through the lymphatic system from the paracardiac and the hilum except for small areas immediately under the pleura.

which may drain into the pleural lymphatics, has a vital bearing on the pathology and prognosis of the disease. Of prime importance in the reading of an X-ray chest plate, however, is a thorough understanding of the septa of the lung and their influence on the pathology. When an adult possesses the ordinary amount of resistance the lesions of pulmonary tuberculosis tend to become healed. The lesions of an adult type of pulmonary tuberculosis are the result of repeated infections from without or within. Dematities caused by the pathologic changes of pulmonary tuberculosis and shown on the plate vary in their quality and degree, progressing from the least densest to the heaviest as follows: (1) a reticulate exudate (2) cellular exudate (3) fibrous, (4) caseation (5) calcification. A thorough study of chest plates with this understanding will enable one to read the changes in terms of the actual pathology. Given an acute infection or infarct, the resultant densities shown on the X-ray plate will all be of the same quality because all of the lesions will be in the same pathologic state.

The lung lesions secondary to chronic sinus infection may be characterized as areas of exudate in the lung. Lesions located in the periphery produce perfect clinical picture of incipient pulmonary tuberculosis with fever, cough, expectoration, malaise, loss of weight, blood spitting, and localized rales over the periphery. The X-ray picture may show definite localized densities, but when two or more densities are present they are of the same quality.

The presence of a non-tuberculous lesion in the lungs having been determined, proper handling of the case will then demand an X-ray examination of the sinuses and the close co-operation of a competent nose and throat specialist. Malignant tumors of the lungs, such as carcinoma or sarcoma, spread by continuity with no respect for septa. In the majority of cases the X-ray plate shows ball-like lesions.

The authors' conclusions are as follows:

1. The first step in the differential diagnosis of lung diseases is to determine whether the lesion is tuberculous or non-tuberculous.

In any case of apical catarrh, purulent bronchitis, bronchiectasis, or localized areas of pneumonia, a search should be made for infection in the head or throat.

2. The symptoms of incipient pulmonary tuberculosis are the symptoms of a focal infection.

3. A properly interpreted X-ray plate of the chest is the most valuable aid in the differential diagnosis of tuberculous lung lesions and acute infections secondary to sinus disease. DAVID R. BOWEN, M.D.

Dahmann, H. Osteoma of the Accessory Nasal Sinuses. Two New Contributions and Critical Collective Review (Über das Osteom der Nasen Nebenhöhlen. Zwei neue Beiträge und kritische Sammelrezension). *Zeitschrift für Hals, Nasen- und Ohrenheilkunde* 9, 4, 30.

The author reviews thirty-six cases of osteoma of the nasal accessory sinuses which have been

reported during the last ten years. Two of his own cases are described in detail.

Dahmann's first case was a previously diagnosed very large osteoma. Removal of the tumor resulted in a cure in spite of severe injury of the dura with the escape of cerebrospinal fluid. As the frontal sinus was normal and the nasal cavity was not opened, there was no infection of the meninges.

In the second case the removal of a very small osteoma in the vicinity of the lamina cribrosa in a previously healthy person led to meningitis and death because there was free communication between the sinus and the nasal cavity and the meninges are infected by way of the diseased frontal sinus.

In conclusion the author gives data led description of the pathogenesis, symptoms, and treatment of osteoma. BERNHARDT (2)

Meyer, M. Carcinoma of the Ethmoid Bone. With New Contributions on Ossification in Tumors (Über das Carcinom des Siebheims. Mit neuen Beiträgen zur Knochenbildung in den Geschwülsten). *Zeitschrift für Hals, Nasen- und Ohrenheilkunde* 9, 85.

Among five carcinomata of the ethmoid bone observed during the last year there were three adenocarcinomata, one carcinoma commune, and one pavement cell carcinoma. The characteristic histoscopic picture is the displacement of the septum toward the normal side by bluish to grayish red tumor which is superficially ulcerated. Occasionally, if the tumor originates from the posterior ethmoid cells, it is demonstrable also by posterior rhinoscopy. The symptoms—headache, hemorrhage, ocular disturbances, and swelling of the external nose—vary in different cases, and fluoroscopic and roentgenographic examinations do not always give the same findings. Biopsy is very important in the diagnosis. Therapeutically, radical operation and subsequent irradiation are advisable but recurrence is the rule.

The second portion of this article is concerned with interesting anatomical observations on the development of bone by osteoblasts in perforated bones, the neoplastic and metaplastic development of bone in the supporting tissue, the new formation of bone from connective tissue cartilage, and the development of cartilage from gelatinous tissue. SCHWARTZ (2)

Schittler, E. How May the So-Called "Berlens Accidents" in the Irrigation of the Antrum of Highmore Be Avoided? (Wie lassen sich die sog. Berlens Zufälle bei der Kieferhöhlenirrigation vermeiden?). *Zeitschrift für Hals, Nasen- und Ohrenheilkunde* 9, 7.

The author disapproves of the use of sharp needle or trocar-shaped instruments for the puncture of the antrum of Highmore, recommending instead the dull Siebenmann cannula with which the puncture is undertaken by way of the middle nasal meatus. He draws the fol-

1. Most of the serious complications occurring in the course of puncture or irrigation of the antrum of Highmore can be traced to the occurrence of air embolism.

2. A smaller number of these are reflex processes set up by the operative trauma in the medulla oblongata, the sympathetic-vagus system and the cerebrum, causing symptoms in the respiratory and circulatory systems similar to those occasionally observed in other operative procedures in the interior of the nose in which air embolism can take as part, and those occurring occasionally as signs of cocaine poisoning.

3. In all of the definitely proved cases of air embolism up to the present time a sharp instrument was used for the puncture or irrigation of the antrum of Highmore. In regard to the origin of the air embolism in the autopsy material available, it must be assumed that the point of the instrument piercing the mucosa of the lateral nasal wall or the antrum of Highmore punctured a vein, direct in fact, of air resulting.

4. The decisive factor in the development of the air embolism is the manner in which the puncture of the antrum of Highmore is done.

5. The use of dull, flexible cannulae almost completely prevents perforation of the mucosa of the antrum of Highmore; no case of air embolism after puncture or irrigation with a dull cannula has yet been reported.

6. The puncture of the antrum of Highmore with the Seibenmann cannula through the fontanelles through the membranous part of the middle nasal meatus, or through an accessory opening is no more difficult technically than other procedures.

B. FROEDMANN (7)

THROAT

Tischler J. H. X-Ray Treatment of Tonsillar and Lymphoid Tissues. *A. Otol Rhinol and Laryngol* 92 222, 1945

Both lymphatic and embryonic tissues are more easily destroyed by the X-ray than any other living cells. The tonsil is made up largely of lymph tissue and the small fibrous tonsil commonly associated with rheumatism contains lymph follicles, of which 50 per cent are embryonic tissue and the remainder composed of mature lymphocytes. Very small doses of X-ray may be used to promote absorption of the lymphatic element, and will in no way interfere with any of the surrounding and adjacent cells or glands. From the standpoint of infection, the shrinkage of the tonsil and the lymph tissue of the lateral and posterior walls of the nasopharynx by the X-ray will reduce the distention of the crypts throughout the entire mucous membrane and thus promote drainage. This is impossible by any other method. The technique requires 5 in. spark gap, a current of 5 ma., 3-mm. aluminum filter 1.5 m. skin distance, and three mm. tes. exposure to each tonsil. From five to ten treatments are given

at intervals of one week. The treatments are repeated in all cases until members of the hemolytic group or the pneumococcus group, or other pathogenic organisms found present, disappear. A minimum of five treatments is given if no virulent bacteria are discovered.

Thirteen cases of tonsils examined before and after X-ray treatment showed no increase of fibrosis, but some evulsion of the cells of the mucosa with apparent widening of the crypts. There was no reduction in the size of the lymph follicles, but in a few cases there appeared to be thinning out of the number of cells. There was no apparent reduction in the amount of lymphoid tissue.

In observing the cases over a period of six months the author noted a marked reduction in size in the greatly hypertrophied tonsils following X-ray therapy. The tonsils removed after a course of roentgen-ray treatment showed marked contraction behind the pillars rather than a decrease in size. The organs were more densely adherent after treatment.

In the author's opinion, X-ray therapy is a valuable adjunct to present day methods of treating diseases of the throat, but its use is limited as the tonsil is apt to become infected after it has been rendered sterile by means of the X-ray. The operation of tonsillectomy remains the method of choice when it can be used safely. In the cases of neurotic persons poor operative risks and persons who refuse any operative procedure, roentgen-ray therapy is of decided value.

JAMES C. B. SWELL, M.D.

Boyd E. Observations on Some Throat Conditions in Children. *Med Press* 923, civ 56

The author discusses (1) the influence of the contraction of the palatoglossus muscle in the formation of the pendulous and buried types of tonsils (2) smothering (3) the influence of defective nasal breathing in the production of deformities of the bones of the face, and (4) affections of the tonsils in infancy.

Boyd believes that the shape of the tonsil depends upon the strength of the contraction of the palatoglossus muscle. The stronger the muscle the more protruding or buried the tonsil. Tonsils of the pendulous type are more easily removed with the patient gagging, but the removal of the buried type demands relaxation.

Smothering is explained by the assumption that the tongue is relaxed and, with the epiglottis falling backward, partially shuts off the airway. When the negative pressure in the thorax is sufficient to draw the air through the narrowed opening, the air is set in vibration.

The defective growth of the bones of the face is more of a biological problem than the result of nasal obstruction. Factors of importance are the condition of the general health and nutrition in early life and the proper development of both the primary and the secondary teeth.

In the author's opinion acute and chronic conditions of the tonsils may occur in infancy and the tonsils should be removed, when diseased, irrespective of the age of the child. The physician in charge should always be consulted. O M Rott M D

Babcock, J W. Observation on the Results of Roentgen Therapy in Chronic Tonsillitis. *J Am M Ass* 9 3, 1917 300

Babcock reports his observations on the results of roentgen therapy in nine cases of chronic tonsillitis. It shows the futility of depending upon this method in dealing with chronic infected tonsils. He found that roentgen therapy as now administered may cause more or less diminution in the size of tonsils or other lymphoid tissue in the pharynx or nasopharynx, but that the residue may be acutely inflamed and much increased in size during the inflammation. Moreover, it has been demonstrated that the small fibrous tonsil is equally apt to serve as a focus of infection with remote symptoms.

The findings in excised tonsils indicate that they are not in de fere of pathogenic bacteria. There is no evident increase in connective tissue, diminution of lymphoid tissue, lack of activity of the germinal centers, or widening of the crypts. Neither the demands nor the hypertrophic lymphoid nodules on the posterior wall of the pharynx disappear or change in any appreciable way and they are subject to occasional inflammations similar to those preceding roentgen therapy. General symptoms, involving the heart and joints, have not been relieved in these cases by roentgen therapy, but in several of them has improved following an operation performed some time after the roentgen treatment.

In conclusion the author states that until it is more definitely shown that diseased tonsils and other lymphoid tissue in the pharynx and nasopharynx can be eradicated as efficiently by a less unpleasant process, reliance must be placed on surgery. O M Rott M D

Kahn, C F. Tonsillitis and Its Complications. *Am J S* 15 923 1917.

The author stresses the importance of careful pre-operative examination of the patient in order to discover conditions, such as unrecognized, might give rise to severe or even fatal complications following or during the removal of the tonsils. Several case reports are given to illustrate this point. The following complications are mentioned: hemorrhage, the lodging of a food bolus in the pharynx, status thymicus, feeble heart, coincident suppurative appendicitis, lung abscess, tuberculosis, syphilis, lymphosarcoma of the cervical glands, suppuration of the accessory sinuses and neurasthenia.

In order to discover the presence of such complications the patient should be taken to the hospital the day previous to the operation and complete physical and laboratory examinations should be made in addition to careful recording of the history. O M Rott M D

Hig, F A. Cysts of the Bursa Pharyngea. *Laryngoscope* 9 3, 1917 37

The bursa pharyngea is a small median pouch or recess connected with the pharyngeal tonsil on the upper posterior wall of the nasopharynx. Its nature is still indefinite but has been variously stated to be (1) the remains of Rathke's pouch, (2) a crypt developed in connection with the pharyngeal tonsil, (3) an independent outgrowth of the mucous membrane. The first of these is ruled out by Frazer's work demonstrating that Rathke's pouch is along the back of the nasal septum, a situation entirely too far forward for the development of a cyst in this region.

Cysts of the pharyngeal bursa are first observed in the cadaver by Luschka in 1863. Tornwaldt, in 1885, attempted to show definite relation between these cysts and nasopharyngeal cancer, so-called Tornwaldt's disease. These cysts rarely become large enough for clinical recognition. They vary in size from a few millimeters to about one centimeter in diameter and may occur at any age. In the nasopharyngeal mirror they appear as glistening hemispherical bluish gray or slightly yellowish masses having broad attachments to the mucosa of the upper posterior wall and the soft palate of the nasopharynx. They are either unilocular or multilocular, have a thin limiting membrane or slightly fluctuate and contain thick viscid mucus or mucopus. The posterior wall is formed by the mucous membrane over the basilar process of the occipital bone which is exposed according to the cavity of the cyst wall. As a rule such tumors do not cause symptoms unless there is an associated inflammatory condition or they are large enough to cause obstruction. It should not be difficult to make diagnosis as the location and appearance of the cyst are characteristic. Clinically they are significant as a rule only from a diagnostic standpoint, many of the cases having been found accidentally during the course of routine nasopharyngeal or detailed postmortem examinations. The cysts are reported, one that of a man aged 37 years, the other that of a man of 5. In both instances the cyst was discovered during the course of a routine nasopharyngeal examination, no symptoms referable to the tumor being present.

Berry G. War Surgery of the Larynx, with Special Reference to the Work at Cape May. *Laryngoscope* 9 3, 1917 85

The principal symptoms of an injury of the larynx are aphonia, hemorrhage, dyspnea, external hemorrhage, dysphagia, emphysema, difficulty in moving the neck, and injury of the nearby nerves. The more frequent complications are bronchitis, pneumonia, septicemia, mediastinitis, and gas infection.

The treatment depends upon the nature of the lesion. Palliative treatment consists of rest and the use of sedatives, steam inhalations, and allied medication. Many cases are cured by these procedures.

The first essential is to prevent choking. If palliative measures do not serve, a tracheotomy becomes imperative. If the case is under close observation in hospital, tracheotomy may be delayed, but if the patient must be transported it should be performed at once. The majority of surgeons prefer to perform a high tracheotomy first and a low one later if the cannula remains in for a long period of time.

Extralaryngeal bleeding is controlled by the usual surgical procedures. Intralaryngeal bleeding usually stops spontaneously.

The emphysema takes care of itself after free breathing has been restored and the wound has been opened up. Dysphagia due to traumatic swelling disappears as the edema goes down. If the oesophagus has been cut, the edges should be sutured and the patient fed for a while through a tube or by rectum.

The indirect laryngeal picture should be studied as early as possible in order that tears of the mucous membrane, oedematous stenoses, and early paralysis may be determined and recorded against later changes.

Of twelve cases treated at Cape May, high tracheotomy was done in six, and in three of the latter low tracheotomy as done later. In two the tube was removed after three weeks, and one after one year. In another it will be removed soon but in the fifth must be left in place for some time longer. The sixth patient has not been heard from for over a year.

In four cases a chronic laryngeal stenosis developed and required protracted operative treatment.

The vocal results may be classified as follows: whisper once, four weak, hoarse once, five strong, hoarse once, three. There were no fatalities in the series.

In the author's opinion infection plays a very important part in the acute cases, but in chronic stenoses the presence of the tracheotomy tube is of greater importance. When a high tracheotomy is done, a space through which no air passes is established between the tube below and the cords above. The organism tends to fill up such dead space, the resulting stenosis being not much a scar contraction as new tissue formation built in from the cartilages all in order to defend this tissue infiltration. The caliber of the breathing tube should be diminished so that more air can pass around the tube to exert positive pressure.

JAMES C. BRASWELL, M.D.

Jensen, A. Subcutaneous Avulsion with Oblique Torsion of the Larynx After Burial (Subcutaneus Avulsion mit schräger Torsion des Kehlkopfes nach Versteckung). *Zentralblatt für Chirurgie*, 1912, 7.

In a 66-year-old soldier 24 years old was buried in such a way that he was covered by earth up to his mouth hole in the standing position. His head was turned and bent to the left, his neck was squeezed and separation was possible only with the greatest

difficulty. The author saw the patient for the first time four years after the injury. Respiration was then difficult only on rapid walking, on bending down, and when the head was turned. Externally absence of the muscular pad on the right side of the neck and of connection in the center between the hyoid bone and the edge of the thyroid cartilage was found. Over the sternum was protrusion as large as an apple, which proved to be the larynx. On laryngoscopic examination the entire left half of the larynx appeared shortened but the right half was very clearly visible. The author explains this condition as follows:

During the burial the right side of the neck was under considerable pressure from the masses of earth lying upon it. The right sternocleidomastoid muscle was stretched and ruptured with the formation of a hematoma. The stretching of the hypothyroid region and torsion and squeezing were produced. With developing tension of the larynx,

an attempt is made to overcome the obstruction to expiration in reflex manner by drawing the larynx upward and downward (Gerhardt's symptom). The result of this attempt in this case was the violation of the thyrohyoid muscles and the upper cords of the thyroid cartilage, and the sinking of the larynx in its position of torsion downward to the sternum. The hindrance to swallowing was shown roentgenologically to have been caused by the pressure of the displaced larynx on the oesophagus. H. JENSEN (7).

MOUTH

Darling, B. C. Can the Medical and Dental Professions Agree on Any Standardized Treatment of the Focus of Infection? *J. Radiol.* 9, 3, 1919.

The material presented in this paper has been compiled from about fifty-five replies to questionnaires sent out to 200 dentists in various parts of the country. These men are all well known in the profession and their replies may be considered a representative of what dentists are doing today. The problems presented by oral foci of infection in the form of periodontal and pyorrheal conditions.

The following questions were asked:

What is your present opinion as to extraction in the case of a tooth that shows definite periodontal destruction?

b. What is your present opinion as to extraction in the case of a tooth that shows definite periodontal rarefaction or chronic abscess?

12. If you believe in root canal treatment of these teeth, what method do you recommend?

b. What X-ray appearance will differentiate those favorable for root canal therapy from those that are not?

13. What important clinical symptoms or guide other than the X-ray appearance will enable you to tell which teeth will go on to repair and bone restoration and which are a possible source of infection?

In the author's opinion acute and chronic conditions of the tonsils may occur in infancy and the tonsils should be removed when diseased irrespective of the age of the child. The physician in charge should always be consulted. O. M. Rorr. M. D.

Babcock, J. W. Observation on the Results of Roentgen Therapy in Chronic Tonsillitis. *J. Am. M. A.* 9, 3, 1919, 300.

Babcock reports his observations on the result of roentgen therapy in nine cases of chronic tonsillitis. It shows the fallacy of depending upon this method in dealing with chronic infected tonsils. He found that roentgen therapy as now advocated may cause more or less diminution in the size of tonsils or other lymphoid tissue in the pharynx or nasopharynx but that the residue may be acutely inflamed and much increased in size during the inflammation. Moreover it has been demonstrated that the small fibrous tonsil is equally apt to serve as focus of infection with remote symptoms.

The findings in excised tonsils indicate that they are not made free of pathogenic bacteria; that there is no evident increase in connective tissue; diminution of lymphoid tissue; lack of activity of the germinal centers, or widening of the crypts. Neither the adenoids nor the hypertrophic lymph nodes on the posterior wall of the pharynx disappear or change in any appreciable way and they are subject to occasional inflammations similar to those preceding roentgen therapy. General symptoms involving the heart and joints have not been relieved in these cases by roentgen therapy but in several of them has improved following operation performed some time after the roentgen treatment.

In conclusion the author states that until it is more definitely shown that diseased tonsils and other lymphoid tissue in the pharynx and nasopharynx can be eradicated as efficiently by less unpleasant process, reliance must be placed on surgery.

O. M. Rorr. M. D.

Kuhn, C. F. Tonsillectomy and Its Complications. *Am. J. Surg.* 9, 3, 1919, 302.

The author stresses the importance of careful pre-operative examination of the patient in order to discover conditions which, unrecognized, might give rise to severe or even fatal complications following or during the removal of the tonsils. Several case reports are given to illustrate this point. The following complications are mentioned: hemorrhage, the lodging of food bolus in the pharynx, status lymphaticus, feeble heart, coincident suppurative pericarditis, lung abscess, embolism, epipharyngeal abscess of the cervical glands, separation of the accessory sinuses, and neurasthenia.

In order to discover the presence of such complications the patient should be taken to the hospital the day previous to the operation and complete physical and laboratory examinations should be made in addition to careful recording of the history.

O. M. Rorr. M. D.

Figl, F. A. Cysts of the Bursa Pharyngea. *Laryng. u. Rhin.* 9, 12, 1919, 37.

The bursa pharyngea is a small median pouch or recess connected with the pharyngeal tonsil on the upper posterior wall of the nasopharynx. Its nature is still indefinite but has been erroneously stated to be (1) the remains of Rathke's pouch, (2) a cyst developed in connection with the pharyngeal tonsil, (3) an independent outgrowth of the mucous membrane. The first of these is ruled out by Frazer's work demonstrating that Rathke's pouch is along the back of the nasal septum, a situation entirely too far forward for the development of a cyst in this region.

Cysts of the pharyngeal bursa were first observed in the cadaver by Luschka in 1868. Tornwaldt in 1885 attempted to show definite relation between these cysts and nasopharyngeal catarrh, so-called Tornwaldt's disease. These cysts rarely become large enough for clinical recognition. They vary in size from few millimeters to about one centimeter in diameter and may occur at any age. In the nasopharyngeal mirror they appear as glistening hemispherical bluish gray or slightly yellowish masses having broad attachments to the middle of the upper posterior wall and the sulcus of the nasopharynx. They are either submucosal or intramucosal but a thin limiting membrane are slightly fluctuant and contain thick viscid mucus or mucopus. The posterior wall is formed by the mucous membrane over the basilar process of the occipital bone which is excavated according to the curve of the cyst. As a rule such tumors do not cause symptoms unless there is an associated inflammatory condition or they are large enough to cause obstruction. It should not be difficult to make diagnosis as the location and appearance of the cyst are characteristic. Clinically they are significant as a rule only from a diagnostic standpoint, many of the cases having been found accidentally during the course of routine nasopharyngeal or detailed postmortem examinations. Two cases are reported, one that of a man aged 37 years, the other that of a man of 5. In both instances the cyst was discovered during the course of routine nasopharyngeal examination no symptoms referable to the tumor being present.

Berry, G. War Surgery of the Larynx, with Special Reference to the Work of Cape May Laryngoscope. 9, 3, 1919, 33.

The principal symptoms of air injuries of the larynx are phony, hemorrhage, dyspnea, external hemorrhage, dysphagia, emphysema, difficulty in moving the neck, and injury of the nearby nerves. The more frequent complications are bronchitis, pneumonia, septicemia, mediastinitis, and gas infection.

The treatment depends upon the nature of the lesion. Palliative treatment consists of rest and the use of sedatives, steam inhalations, and other medication. Many cases are cured by these procedures.

BIBLIOGRAPHY of CURRENT LITERATURE

GENERAL SURGERY—SURGICAL TECHNIQUE

NOTE.—The bold face figures in brackets at the right of reference indicate the page of this volume on which abstract of the article referred to may be found

Operative Surgery and Technique

- Bun grafting by exact pattern B DOUGLAS *Ann Surg* 1923 *lxviii*, 223
 An operation for ingrowing toe nails G C NEY *J Am M Ass* 1923 *lxix*, 374
 A protest against the unrestricted use of the sharp tenaculum E RIVER *Zentralbl f Chir* 1923 *xliv*, 87
 Why women carbonate S HANDBERG *Internat J Surg* 1923 *xxvii*, 67
 Treatment of suppurative diseases without tampon and the results of this method N I TOMILOVA *Verband f Russ Chir Kongr Petrograd*, 93
 Window drainage A SCHUBERT *Zentralbl f Chir* 1923 *xliv*, 121
 The factor of obesity in surgical operations W C G KNECHT *J Missouri Stat M Ass* 1923 *xx*, 49
 Instruments left in the peritoneal cavity—an analysis of forty four unpublished cases C WHITE *Brit M J* 1923 *l*, 128
 Hypertonic glucose solutions as prophylactic against injurious effects of operation and anesthesia B TRICE *Surg Zentralbl f Chir* 1923 *xliv*, 147
 The physiology of wounds E MICHENER *Beitr Klin Chir* 1923 *cxviii*, 38
 Postoperative long sequele J PERKINS *Rhode Island M J* 1923 *vi*, 7
 Postoperative pulmonary complications C O COOPER and W PUCKLER *Rhode Island M J* 1923 *vi*, 8

Aseptic and Antiseptic Surgery

- Chloramine in the surgical treatment of wounds W BOCK *Med Klin* 1923 *xviii*, 435
 The influence of antiseptics on the cells Z W OLOS *Verband f Russ Chir Kongr Petrograd*, 9
 The surgical importance of iodine diiodomercaptyl and potassium H G ROWELL *Surg Gynec & Obst* 1923 *xxvii*, 719
 The use of pyocyanin aureum and ichthyol in minor surgery CANOV *Zschr f Bahrn Gynakologischer*, 1923 *xix*, 13

Anesthesia

- A historical review of the use of anesthesia in surgery J E SERRAVALLE *Nowy Chir Arch* 1923 *ii*, 30

What is the best method of inducing anesthesia of those in need of it MAYNE *Brussels med* 1923 *ii*, 356

A safe method of anesthetizing children with ethyl chloride J F LUNAR *J Am M Ass* 1923 *lxix*, 3

Dangers of the chloride of zinc in children SERRAVALLE *Deutsche med Wochenschr* 1923 *xliv*, 55

The physiological effects of nitrous oxide N C T OR California St J M 1923 *xii*, 70

Infiltration anesthesia in the corneal region M V CARULLO *Crón med Luna* 1923 *xxix*, 359

Local anesthesia G SABINO *Policlin Rome* 1923 *xxi*, 243

A serious accident in the induction of local anesthesia by cocaine adrenalin J BORMEAT LACROIX and G ACQUAVIVA *J de méd de Bordeaux* 1923 *xcv*, 84

Clinical investigations on the behavior of the blood pressure and the pulse during and after novocaine adrenalin anesthesia O WERNER *Deutsche Zschr f Chir* 1923 *xliv*, 50

Further observations on injurious effects of novocaine A DICKER *Deutsche med Wochenschr* 1923 *xliv*, 80

Spinal anesthesia in general surgery C R FOR *Crón med Luna* 1923 *xxix*, 383

A case of isolated paralysis of the abdominal wall following spinal anesthesia induced alk stovaine A W LUTHERMANN *Psychiat Nerven experiment Psychol* 1923 *ix*, 160

Lumbar anesthesia SKIFFARDT *München med Wochenschr* 1923 *lxix*, 625

Lumbar anesthesia M Von B *Stuttgart Folio* 1923

Surgical Instruments and Apparatus

A few important points on the LaForte and Beck Shenk instruments S COHEN *Laryngoscope* 1923 *xxviii*, 49

Care and preservation of resection yammers and canulas H FRITZLER *Deutsche med Wochenschr* 1923 *xliv*, 4

An intravenous needle with screw cap H W ARTHUR *J Am M Ass* 1923 *lxix*, 399

A modification of the Deschamps vascular ligation needle L ON CROMER *Zentralbl f Chir* 1923 *xliv*, 504

A double triangle towel shoulder-cap G D CUTLER *J Am M Ass* 1923 *lxix*, 47

A thoracic abdominal clip J J RECTENWALD *N York M J & Med Rec.* 1923 *cxviii*, 1497

SURGERY OF THE HEAD AND NECK

Head

- Cancer of the scalp on occipitalis child J CUTHBERT and J LACROIX *Bull et mêm Soc anat de Par* 1923 *xxix*, 448

Fracture of the skull and its complications M F BLAIR *Am J Surg* 1923 *xxviii*, 33

Intracranial stroke following fracture of the skull report of case with review of the literature F C GEYER *Surg Gynec & Obst.* 1923 *xxvii*, 51

3 Do you believe that where teeth show bone restoration more or less complete in two or three years this indicates that the teeth are no longer a possible source of infection? Why?

4a Is there any working basis in your locality? If so what is it?

4b Does each dentist work it out for himself on the basis of root canal treatment, if possible withholding extraction?

5 How would you define or standardize the dental attitude in this matter so that the dental and medical professions can understand each other?

6 In pyorrhea what amount of alveolar destruction indicates extraction?

7a Is it sounder for the diagnostic survey for the average dentist to consult with a medical or dental roentgenologist or to do all his own X ray work and interpretation?

7b Will the public as well as the professions be benefited by sharing of the responsibility by consultation?

The following is summary of the replies

1a Fifty-six per cent extract 1 per cent treat first 34 per cent save

1b Forty-eight per cent extract 40 per cent treat first, 1 per cent save

2a There is too great divergence of methods for classification

b Seventy six per cent use the X-ray for differential diagnosis 24 per cent do not depend on the X-ray

2c Seventy three per cent use clinical symptoms 27 per cent do not depend on clinical symptoms

3 Thirty-eight per cent believe infection remains after bone restoration 13 per cent are undecided, 49 per cent believe infection is cured.

4a There is no agreed working basis

4b Fifty-four per cent of the dentists work out each case for themselves 13 per cent have a slight tendency to an agreed practice 33 per cent are on certain.

5 The majority believe it is impossible to standardize the dental attitude at the present time

6 There is no definite standard as to what amount of alveolar destruction indicates extraction

7 Forty-two per cent believe the dentist should do his own X-ray work 53 per cent favor consultation with roentgenologist.

7b. Twenty four per cent are unwilling to consult with members of the medical profession, 76 per cent are willing to consult S J SARRIS, M D

- Cranial and intracranial injuries C K P HIGGS
 Canadian M Am J 923, xxi, 26
- Fracture of the skull base with superficial hemorrhage on the opposite side: report of an interesting autopsy S GRAVES Kentucky M J 923 xii, 634 [410]
- A complicated case of coarctation S LINQVIST Zen tralbl f Chir 9 2, xlix, 744
- Cerebral polyplasia due to trauma S S PRACONOVSKY Arch f klin exp Med 9 1
- Osteitis of the temporal bone with osteomyelitis H L WEALE Brit M J 19 3, 4, 33
- Stab wound of the brain J KIRBY Oryon betel 923, lvi, 444
- Cortical anaesthesia. II A RILEY Med Clin N Am 923 vi, 765
- The use of air in the diagnosis of intracranial lesions: an illustrative case J C GAA Surg Clin N Am 9 2, xi, 290
- Otic meningitis H BOYD-SMITH J Indiana State M Ass 9 3, xvi, 37
- The differential diagnosis of meningitis C F NEV J Indiana State M Ass 9 3, xvi, 31
- A peculiar form of meningitis following intraspinal therapy administered during the course of unrecognized bronchopneumonia, with report of the pathologic findings J A F MILLER Bull Buffalo Gen Hosp Buffalo, 9 3, 48
- The treatment of meningitis M F PORTER J Indiana State M Ass 923, xvi, 38
- The regeneration of the meninges W V SA AB and S C HARVEY Ann Surg 9 3, lvi, 39 [410]
- Cerebral and cerebellar hemorrhages in apparently healthy adolescents and children. C O H WYMONZ Practitioner 923, cli, 45 [410]
- Acute hemorrhagic encephalitis: report of a case following scarlet fever J A THOMAS L H DIXON, and G McCONVILLE Am J Dis Child 923, xiv, 96
- Psychotic sequelae of epidemic encephalitis R L RICHMOND California State J M 9 3, xxi, 56
- The treatment of the meningeal form of acute encephalitis with anti-meningococcus serum W W HERRICK J Am M Ass 9 3, lvi, 58
- Encephalitis lethargica: an interesting outbreak in small school L L FYFE Lancet, cccv, 379
- The terminology and pathological anatomy of brain cysts W MOGILNITZ Watschenbooms Dyelo 9 2, xi, 337 [410]
- A roentgenographic study of the sella turcica in normal children M B GORDON and A L L BELL Endocrinol 923 vi, 5
- The function of the hypophysis cerebri P BAILEY Endocr d Physiol 923 xi, 6
- Some points in regard to hypopituitarism and its treatment, with some illustrated cases A A BARKER South M & S 923, lxxv, 9
- Some of the surgical problems in the management of pituitary disorders C H FRANKER Surg Clin N Am 9 3, vi, 33
- Cases of cerebral neoplasm simulating dementia paralytica C ROSENBERG J Am M Ass 9 3, lvi, 470
- Successful removal of a brain tumor: the unusual post-operative complications W FRANK Internat J Surg 9 3, xxxvi, 40
- Increased cerebral pressure with fat embolism S LEONARD Acta chirurg Scand 923 lv, 37 [411]
- Intra-ocular manifestations in the various brain conditions associated with brain pressure, and the modern operations by which these manifestations are brought about J A BLACK Wisconsin M J 923 xxi, 40
- Intracranial pressure and cerebrospinal fluid secretion after radical operation for brain tumor H SCHOTTEZ Med Klin 923, xiv, 4
- Cerebral hypertension in infancy: clinical considerations A STORM Scand med 923, xxi, 125
- Ventriculography and intraventricular photography in internal hydrocephalus T F Y and F C GAUT J Am M Ass 923, lxxv, 47 [411]
- Unilateral cerebrospinal fluid: clinical report of five cases C H FRANKER and K M HODGINS Surg Clin N Am 1923 xi, 28
- Transcranial drainage F PAGES and L LLOYD Rev espal de cirug 923
- Lesions of the parietotemporal area L F D VAN J Am M Ass 9 3, lxxv, 350 [411]
- On the question of rhinoplasty N N PETROV West Brit Chir J (program abstracts), 923, i, 77
- Rotation of the cheek J F S ENGER Moenchs med Wchnsch 9 3, lxx, 780 [412]
- Double lip G M DORRANCE Ann Surg 92, lxxv, 376
- Harleyp and cleft palate M A FROSTWELL Internat J Orthodont Oral Surg & Radiology 923, vi, 36
- Carcinoma of the cheeks and lips, general principles involved in operations and summary of the results obtained at the Presbyterian, Memorial, and Roosevelt Hospitals, New York G E BARKER Surg Gynec & Obst 923, xxxvi, 69 [412]
- The diagnosis and treatment of primary isolated actinomycosis of the parotid gland K. BECK Zschr f Hals Nasen- Ohrenheilk 9 370
- The origin and distribution of epitheliomata of the salivary and mucous glands E KROCHENKOR Beitr a path Anat, allg Path 92, lxx, 496
- A case of mixed tumor of the parotid gland with metastases to bones M BUDO Zentralbl f Chir 1923 xix, 888
- Cancer of the lip: its treatment by radium and surgery combined C R WALL J Med Ass Georgia, 1923 xii, 67
- Carcinoma of the tongue: general principles involved in operations, and summary of results obtained at the May Clinic E S JONES and G B NEW Surg Gynec & Obst 923, xxxvi, 163 [413]
- A confusing inflammatory process due to the implantation of radium emanation tubes in the tongue R E FICKER Therap Gaz 9 3, 3, xxxix, 90
- The correction of cleft palate W A BRY South M J 9 3, xvi, 7
- Observations and experiences in the treatment of fractures of the jaw especially the treatment of gunshot injuries of the jaws on the battlefield A KIRCHNER Berlin, 19
- Observation on fifteen fractures of the mandible J L BROWN U S N vol M Bull 923, xvi, 245
- Orthopedic treatment of jaw injuries in ordinary hospital practice A A LEONARD Verhandl d Ross Chir Kong Petrograd, 9
- Carcinoma of the jaws: tongue, cheek, and lips: general principles involved in operations and summary of the results obtained at the Cleveland Clinic G W CHASE Surg Gynec & Obst 923, xxxvi, 19 [414]
- A prosthesis for cases of resection of the mandible D A KOTTE Verhandl d Ross Chir Kong Petrograd, 9
- A tuberculous hematoma evacuated through Wharton's duct M SARRUS Rev espal de cirug 923, 23
- A tuberculous salivary calculus impacted at the gland orifice of the duct: chronic sialoadenitis: ablation of the salivary gland P G BELLER Surg Clin N Am 1923 vi, 93

- A congenital infantile inguinal hernia. T T THOM. Surg Clin N Am. 9 3, iii, 77.
- Inguinal hernia in the male. S ERM. Ann Surg. 1911, lxviii.
- Irreducible right inguinal hernia, appendix and cecum. J B DRAVER. Surg Clin N Am. 9 3.
- Operation on strangulated inguinal hernia in the presence of an overlying suppurating bubo and severe inflammation of the surrounding skin and subcutaneous tissue with recovery. T T THOMAS. Surg Clin N Am. 9 3, ii, 67.
- Lumbar hernia through Grynfeldt's and Lemshult. I S RAVEN. Surg Clin N Am. 9 3, iii, 36.
- The plastic use of the uterus in hernia operations. A MAYER. Zentralbl f Gynick. 9 xiv, 693.
- Hernia into the osseous bursa. W NOORDINHOFF. Geneesk. Bl. 922, xxi.
- The pathogenesis of torsion of the omentum. G WOLFF. Beitr. Klin. Chir. 922, cxviii, 98. [421]
- Primary tuberculous peritonitis. E GRAMMET. Rev. méd. de la Suisse rom. 922, xlii, 658.
- Lat. peritonitis following epiploitis after abdominal injury. W STROZAR. Med. Klin. 92 xvi, 279.
- The intravenous drop-injection of normal salt solution and adrenalin in the treatment of collapse due to peritonitis and following operation. O WENDROFF and F C HILGENBERG. Beitr. z. Klin. Chir. 92, cxviii, 29.
- Essentials in the treatment of peritonitis. D K BACON. Minnesota Med. 9 3, vi, 94. [422]
- The bactericidal and the inhibitory power of ether combination: I. the study of the ether treatment of peritonitis. C W JONKINS. Zentralbl f Bakteriologie. 922, xlii, 661. [422]
- The Ochsner treatment in peritonitis. J H JONES and D B PRINCE. Ann Surg. 923, lxxvii, 94. [422]
- The principles of surgical treatment of infection of the peritoneum. F FRANK. Bristol M. Chir. J. 923, xi, 39.
- Surgical treatment of peritonitis. R RICHIE. Beitr. Klin. Chir. 9 2, cxviii, 307.
- ### Gastro-Intestinal Tract
- Some recent advances in the physiology of the alimentary canal. A J CARLSON. Minnesota Med. 9 3, vi, 7.
- Mechanics of the mechanism of movement of the stomach. A. The digestive tract. G FORBES. Am. J. Roentgenol. 923, 2, 87.
- Experimental disturbances of innervation in the stomach and in the esophagus. W KOWALEW. Ztschr. f. d. ges. exp. Med. 922, xxviii, 324.
- The roentgen diagnosis of gastric and intestinal diseases. Ed. Berlin. Urban & Schwarzenberg. 9.
- Modern view on the physiopathology of the stomach. M ASCOLI. Policlin. Rome. 9 3, xxi, sec. Chir. 43.
- Functional gastric tests. A H AARON, H C SCHROEDER, and J C BECK. N. York Stat. J. M. 9 3, xvii, 69.
- Nervous mechanism of functional disorders of digestion, with special reference to hypertonic and hypotonic dyspepsia and nervous colitis. G B BLANCHER. Med. J. Australia. 9 3, 4, 45.
- The pathology of the stomach. W H SCHULTZ. Erbsch. d. allg. Path. path. Anat. et. 9, xv, 485.
- Is the stomach focus of infection? N KOWALEW. Med. Press. 923, cxv, 54.
- A simplified handle to lessen the danger of gastroscopy. W STROZAR. Zentralbl f Chir. 9 3, 57.
- An inquiry into the pyloric stenosis of infants. L G PARSOVA and S G BARLING. Lancet. 9 3, cxv, 59.
- Pyloric spasm infant and treatment. B HERR. Deutsche Ztschr. f. Chir. 9, cxviii, 356.
- Report of a case of congenital hypertrophic pyloric stenosis. W R BROSCHER. J. Arkansas M. Soc. 9 3, vi, 7.
- Atropin in the treatment of congenital pyloric stenosis. M H BASS. Med. Clin. N. Am. 9, vi, 579.
- The various modifications of Bier's operation for gastropyloric stenosis. D MALCHOW. Zentralbl f Chir. 9 3, 55.
- Experiences in the surgical treatment of gastropyloric stenosis. A RICHIE. Brit. Clin. Chir. 9, cxviii, 3. [423]
- T. Cases of aphthous ulcer of the stomach cured by mesalvarium. MAMA. Pharmaz. and Pharmaz. 9, vii, 7.
- Unexcited hyperphosphatemia: toxic and gastric ulcer. M G ALONCH. Crón. méd. Lima. 9, xxxix, 359.
- Gastric ulcer hemorrhage cured by repeated transverse posterior (oblique) gastroenterostomy. E P RICHARDSON. Surg. Clin. N. Am. 9, 3, 303.
- Some problems of gastric and duodenal ulcer. B MICHAN. B. I. M. J. 9 3. [423]
- Toxic manifestations following the alkaline treatment of peptic ulcer. I. L. H. RIV and A. B. RIVERS. Arch. Int. Med. 9 3, xvii, 7. [424]
- Treatment of gastroduodenal ulcer. S MOSQUERA. Rev. méd. d' Uruguay. 9 3, xvi, 57.
- The surgical operation in gastric and duodenal ulcer. G. F. PATRICK. J. West. Chir. Soc. 9, 3, 65.
- The choice of operation in chronic peptic ulcer. R. A. BARR. Am. J. Surg. 9 3, xxi, 5.
- The present status of the surgical treatment of round ulcer of the stomach and duodenum. K. BOKSNER. Gyn. Obst. 9, 4, 466, 474.
- The immediate results of gastro-entero-tomy for round ulcer of the stomach. A. DEMANTOFF. Writschbezoje. Djeo. 9, xvi, 3.
- Cancerous limits plastica. FAROY and MARCHEL. Bull. et. méd. Soc. anat. de Par. 9, xxi, 479.
- The roentgen diagnosis of benign gastric tumors. 7. KALLBERG. Wien. Klin. Wochenschr. 9, 2, xxv, 9.
- The X-ray diagnosis of benign tumors of the stomach. H. LOMST. Fortsch. d. Geb. d. Roentgenstrahlen. 9, xxi, 23.
- Gastric polypus. J. P. M. CLEGG. J. Radiol. 9 3, ix, 6.
- Fibrosis of the stomach. J. R. COOPER. J. Am. M. Ass. 9 3, lxxx, 549.
- The diagnosis of beginning carcinoma of the cardia by transillumination in the Trendelenburg position. roentgenology of the cardia in general. J. PALLON. Fortsch. d. Geb. d. Roentgenstrahlen. 9, xxi, 35.
- Carcinoma of the stomach. report of case and examination eighteen years after operation. J. D. UCHIDA. J. Am. M. Ass. 9 3, lxxx, 55.
- Cancer of the stomach. C. W. ROBERTS. J. Med. Ass. Georgia. 9 3, xii, 69.
- A case of abnormally large leucomyosarcoma of the stomach. LAUBER. Verhandl. d. Gesellschaft f. Chir. Moskau. 9.
- Cases illustrating the surgery of the stomach. A. P. C. ARNDT. Surg. Clin. N. Am. 9 3, iii, 43.
- A new technique for posterior gastro-entero-tomy. R. R. VILLEGAS. Surg. Gynec. & Obst. 9 3, xxi, 275.
- Postoperative hemorrhage following gastro-entero-tomy. transverse gastrostomy. L. P. RICHARDSON. Surg. Clin. N. Am. 9 3, ii, 5.
- The effect of gastro-enterostomy on gastric function interpreted by the fractional test meal. F. I. G. Hirt. J. Surg. 9 3, 403. [425]
- Roentgenological investigations on the functional behavior of the stomach in the various types of posterior

A simple method of over-riding pain & defecation in cases of anal fissure. E. SILVERST. *Ugrik f Læger* 9
huvr 1935

The conservative treatment of large prolapsed hemorrhoidal nodes. P. BORCHERT. *Med Klin* 9 xvii 454

Liver, Gall Bladder, Pancreas, and Spleen

Hydatid cyst of the liver associated with gall stones and emphysema of the gall bladder and pleura. H. M. L. RANNEY and H. F. VILLACORT. *Brit N J* 9 3 154

A case of primary multiple tuberculomata of the liver with degenerated hydatid cyst. C. T. D. CARRISON and J. B. CLEGG. *N Med J Australia*, 9 3 5

Thrombosis of the hepatic veins as a complication of typhus. W. P. BERNARD. *Naučnyje Sborniki Tul'skogo Gub. Vuzova* 9 3 3

The bacterial content of the blood of the portal vein and the organs of liver abscesses. W. HAAS. *Deutsche Z f Chir* 1932, clxxxii, 39 [430]

Surgical considerations of hepatic carcinoma. A. W. HANSEN. *Med Times*, 9 3 1, 4

Rupture of the liver autotransfusion. E. L. LILLY. *Surg Clin N Am* 9 3, 34, 30

Misdiagnosis of the liver—a occasional cause of obscure pyrexia. D. B. JEWETT. *J Am Inst. Homoeop* 9 3 xv 624

Gall bladder disease. M. E. ROBERT. *South M J* 1933 xvi, 75 [430]

Disease of the gall bladder and gastric function. W. BOWEN. *Brit M J* 9 3, 63

The relation of disease of the gall bladder to the nutrition of the stomach and pancreas. H. E. GARRISON. *Lancet*, 9 3, 305 [431]

The relation of gall bladder disease to diabetes. A. EMMES. *N Orleans M J* 8 5 9 3 440

Non-calculous chronic obstruction. J. J. JONES. *W. A. Downes J Am M Ass* 9 3 377

Intermittent postoperative biliary obstruction. Case report. L. K. BALDWIN. *Kentucky M J* 9 3 30 90

A case of idiopathic cyst of the common bile duct. H. BOLZ. *Deutsche med Wchnschr* 9 3 31 35 [431]

Obstruction of the cystic bile duct by an enlarged lymph node. T. T. THOMAS. *Surg Clin N Am* 9 3 31 73

A case of persistent jaundice in an infant, stress of the common bile duct and biliary carcinoma. B. MITCHELL. *Proc Roy Soc Med Lond* 9 3, xvi Sect Study of Dis Child 7

Obstruction of the ductus choledochus as the end result of gunshot wound of the liver. N. W. SCHWARTZ. *West J Chir* 9 3, 4, 50

Amputation jaundice simulating biliary duct obstruction. G. P. MILLER. *Surg Clin N Am* 9 3 31 5

Parental metabolism and the Van der Bergh Test to differentiate obstructive and non-obstructive jaundice with five case reports. H. W. JONES. *Med Clin N Am* 1933, vi, 385

An encysted bile tract. E. L. MOLLIN. *Orion* 9 3, 31, 304

The importance of indirect roentgen findings in chronic infection of the biliary ducts and gall bladder. M. P. BERNARD. *Am J Roentgenol* 9 3 31 5 [432]

The diagnosis and treatment of gall bladder disease, with special reference to the Meitzner-Lyon test. W. C. ALBERT. *Med Clin N Am* 9 3, 31, 3

Recent cholecystitis. J. B. DEAYER. *Surg Clin N Am* 1933, vi, 31

Cholecystitis without stones. O. S. BARSTOFF. *Nowy Chir Arch* 9 3

The pathogenesis of biliary lithiasis. C. B. SOLER. *Scio med* 9 3 134 4 08

Acute cholecystitis—choledithiasis. A. F. BILLINGS. *Surg Clin N Am* 9 3 31, 20

Chronic calculous cholecystitis. J. B. DEAYER. *Surg Clin N Am* 9 3 31 5

Recent advances in the diagnosis, pathogenesis, and treatment of cholecystitis. W. F. FRAZER. *Ztschr f aesthet Forthbild* 9 3 31 64

Negative roentgenograms in calculous cholecystitis. A. FARA. *Arch brasil de med* 9 3, 31, 86

Indications for surgical treatment in diseases of the biliary tract. A. G. SMITH. *Nowy Chir Arch* 9 3 81

Some observations on gall bladder surgery. S. J. V. VINC. *J Indiana State M Ass* 9 3 31 30

Surgical treatment of diseases of the gall bladder. I. ARNOLD. *South M J* 9 3 31 83 [432]

Indications for cholecystenterostomy. R. J. MURPHY. *J Lancet* 9 3 31 35

Gall bladder removal without drainage. G. F. MARTIN. *Hastings Month* 9 3 31 60

A new method of gall bladder dissection with consideration of the surgical anatomy. G. I. McWORTHER. *Surg Gynec & Obst* 9 3 31 56

The operative treatment of biliary fistulae. A. HILDEBRANDT. *Zentralbl f Chir* 9 3, 31, 87

The relation of the pancreas to the lipolytic content of the blood and tissues in animals. W. E. STAWRAK. *J Chastovo prikladnoe nauka* 9 3 5

Subcutaneous cholecystitis. J. B. DEAYER. *Surg Clin N Am* 9 3 31 7

Differential diagnosis: acute appendicitis vs. acute pancreatitis. J. B. DEAYER. *Surg Clin N Am* 9 3, 31, 5

The pathology and clinical manifestations of chronic pancreatitis. N. M. W. WORTH. *Nowy Chir Arch* 9 3 0, 9

Isolated subcutaneous rupture of the pancreas. A. VARTKOLN. *Brit M J* 9 3, 31, 46

Subcutaneous rupture of the pancreas, stomach, and liver operation recovery. WILSON. *Arch f Chir* 9 3 31 30

The diagnosis of spleen function. M. H. KAHN. *Am J M Sc* 9 3 31 4

Splenomegaly carcinoma with ascites and its operative treatment by splenectomy. R. BAUER. *Med Klin* 9 3 31 46

An unusual case of spontaneous rupture of the spleen cured by splenectomy. M. FRISCH. *Deutsche Ztschr f Chir* 9 3 31 45 [433]

Congenital hemolytic jaundice. D. S. LEWIS. *Canadian M A J* 9 3 31 9

Surgery of the spleen. Ligation of the splenic artery. VON WILHELMSEN. *Deutsche Ztschr f Chir* 9 3 31 374 [433]

The removal of the anatomically adherent spleen splenopetal detachment. P. LORRAINE. *Presse med Par* 9 3, 31, 3

Studies on endothelial reactions: changes in the distribution of colloidal carbon noted in the lungs of rabbits following splenectomy. N. C. FOOT. *J Exper Med* 9 3, 31, 30 [434]

Miscellaneous

Penetrating wounds of the abdomen. W. M. SELLERS. *Am J Surg* 9 3, 31, 3 [435]

The operative treatment of gunshot wounds of the abdomen (the Front). A. D. PROCTOR. *Nowy Chir Arch* 1933 31

- A differential sign in abdominal rigidity C. F. VALE
J Am M Ass. 10 3, 1933, 5
- The diagnosis of obscure chronic abdominal conditions
J L. RAYMOND Am J M Sc., 1933, civ 30 [434]
- Pericentostomal X-ray diagnosis H. D. MITCHELL
J Am. Inst. Röntgen 973, 3 iv 705
- Segmental localization of pain through paravertebral
novocaine injections as differential diagnostic method in
acute abdominal disease A. LARSEN Albrechts med
Wochenschr 9 3, 1933, 14, 2
- The pathogenetic characteristics of the three types
of pain in abdominal disease G. J. WARTHOVEN Am. J
Clin Med 9 3, 1933,
- (Myocoma in surgical diseases of the abdominal organs
S. N. LESKOWSKAJA Wristak Chir i poizna obistat
9 3,
- Pericentostomocentesis as aid in the diagnosis of sub-
diaphragmatic conditions. L. R. SARTRE J Am M Ass.
921 1933, 464 [435]
- The technique of exploratory puncture in subphrenic
abscess on the right side C. H. BAKER Mitt d Grenzgeb
d Med Chir 9 xxiv 595

- Surgery of the upper abdomen under local anesthesia.
R. L. FAIR Illinois M J. 1933, xlii, 30
- Retropneumothorax A. CACCI Arch ital de chir.
19 2 1, 486. [436]
- A case of retropneumothorax arising from the an-
terior common ligament W. H. OGDEN Lancet, 1933,
civ, 35.
- Migratory tumors of the abdomen A. W. COLLINS
N York M J & Med Rec. 9 3, civ, 63 [437]
- Two unusual cases of abdominal cancer J B. DAWSON
Med J Australia, 19 3, 1, 33
- Syphilis of the abdominal and thoracic viscera H. C.
JACOBY Acta med. Scand 973, Suppl. 12, 25
- Surgical diseases of the abdomen caused by animal
parasites H. KILM Russk. russk. Abhandl. d.
Geb d Verdauungs- Stoffwechs. Krankh 1933, vii,
- Echinococcus disease of the abdominal cavity U.
WILKINSON J. Verh. d. Gesellsch f. Chir. Moskau
9
- Ether intravascularly for the relief of hiccup G. L.
GRABOV J Am M. Ass. 10 3, 1933, 599

SURGERY OF THE EXTREMITIES

Conditions of the Bones, Joints, Muscles, Tendons, Etc.

- Contributions to the microscopic findings in bone cysts
F. J. LAMB Deutsche Zeitschr f. Chir 9 cxviii, 43
- Histiotopes of the tissue of the bone marrow H. H. KILM
Verh. d. Gesellsch. f. Anat. Path. Gen., Moskau 9
- Two independent foci in the same individual A. J. ARAM
Arch. brasil. de med 923, xii, 203
- A new method of treatment for chronic infections in-
volving bone H. W. ORR Nebraska State M J 9 3,
vii, 92
- Acute osteomyelitis A. E. MILLER Surg Clin N
Am., 19 3, ix, 33
- Acute infective osteomyelitis D. C. HOLT Ohio State
M J 1933, xii, 77
- Recurrent suppurative osteomyelitis (multiple) A. E.
MILLER Surg Clin N Am 19 3, ix, 57
- On diagnostic and therapeutic importance of some typi-
cal transfer bone points R. BARTIA Ann N York M J
& Med Rec 923, civ, 75
- Other's disturbance of growth M. H. HARRINGTON
Arch. f. orthop. Unfall Chir 19 2, xii, 206
- The blood picture in osteitis fibrosa A. ROSSO Mitt
d Grenzgeb d Med Chir 923, xxiv 586
- Experimental investigations concerning osteoclastically
induced metaphasia in growing and adult bone, and its
significance with regard to the pathology of bone partic-
ularly epiphyseal changes in diseases allied to rickets.
W. MITCHELL Beitr. z. klin. Chir 923, civ, 51
- Retarded rachitis, the retarded rachitic origin of all de-
formities of growth and war osteomalacia A. FROBERG
Finnish d. Chir. Orthop 1933, iv 303
- The treatment of rachitis G. MASON and J. D. KIRK
Arch. f. orthop. Unfall Chir 1933, xii, 43
- Endocrinology in osteomalacia F. MANNING Arch
d. med. e. proc 9 3, xvii, 16
- Certain factors causing the deposition of bone salts in
bone E. A. FAIR Dental Cosmos, 1933, lvi, 76 [438]
- Bone disease following typhoid fever P. KRATZ
Fortschr d. Geb d Röntgenstrahlen, 923, xii, 31
- A case of multiple exostoses in child of 3 years SCHREIB
and VOLLMER Dtsch. Verh. d. Gesellsch. f. Chir. Moskau
1932, xii, 453

- Multiple extra-osseous, one report L. A. ARVOLO
Kentucky M J 9 3, xii, 99
- Tumors of the parathyroid gland in cases of multiple
giant-cell sarcoma of the osseous system B. GERSHBERG
Israelit. Zeitschr f. Path. 19 3, xiv, 195
- Bone tumors sarcoma, perosteal group, sclerosing type,
osteogenic, methods of diagnosis and treatment J. C.
BLOOMBERG J. Radiol 923, iv 46 [439]
- Springs of the large joints of the extremities C. KATZ
Schweiz. med. Wochenschr 9 3, ix, 37 [440]
- A case of septic arthritis in an infant A. M. FORD
Canadian M Ass J 19 3, xii, 8
- Effusion in acute infectious arthritis S. W. BOONER
N York M J & Med Rec 923, civ, 30
- Observations on changes in the joints of relapsing fever
and in its sequelae Paratyphus N. G. I. ANDERSON Ver-
h. d. Gesellsch. f. Anat. Path. Gen., 1933,
- The gonorrhea and the joints OGDEN, FLOTT, and
JES. French med., Par 92 1933, 74
- A gonococcal articular lesion due to operative trauma.
MORCOT and BARTAS Bull. et m. Soc. anat. de Par.,
9 3, xii, 443.
- The action of the trochanter R. CAMBER, Monaster-
sch J. Psychiat. Neurol 923, ix,
- The pathogenesis and treatment of substantial rup-
ture of the long biceps tendon G. ROSSIGNOL Zeitschr
f. Chir 1933, cxviii 3
- Post-traumatic paralysis of the deltoids G. FRYRO
Rev med d'Urologie 1933, xii, 4
- Osteomyelitis of the clavicle NIELL Bull. et m. Soc.
anat. de Par 9 3, xii, 548
- The origin of congenital palsy of the shoulder paral-
ysis P. DILLACOUR Arch. f. orthop. Unfall Chir 923, xii,
28
- Round shoulders L. ROSSIGNOL Arch. f. orthop
Unfall Chir 923, xii, 303
- Sweeping shoulder and voluntary dislocation of the
shoulder M. KAPPEL Arch. f. orthop. Unfall Chir
1933, xii, 553 [441]
- So-called crepitation of the scapula J. VOLLMER
Klin. Wochenschr 1933, ix, 838 [442]
- A case of homeocapsular peri arthritis as symptom of
general arthritis P. HANSEN Med. Klin 923, xvii,
343

- Injuries and diseases of the upper extremity. V. VILLIER. *Leping Thème* 9.
- Operative treatment of supracondylar fracture of the humerus in children. F. SATTA. *Chir d'organi di movimento*, 1922, vi, 659. [439]
- Injuries to the elbow joint and their treatment. J. F. WILKINSON. *Internat. J. Surg.* 1923, xxxvi, 57.
- Two cases of absence of the ulna. M. MCCREERY and P. KOWAL. *Rev. d'orthop.* 9 3, xxx, 147.
- A contribution to the study of rigidity of the hand. S. COHEN. *Chir d'organi di movimento*, 9 2, vi, 666. [439]
- Vascular insufficiency fibrosis in the palmar fascia allied in Dupuytren's contraction—Dupuytren's contraction without contraction. F. P. WILSON. *Med. Press*, 9 3, xxv, 33.
- Multiple chondromata of the hand sarcomatous degeneration (?) of one chondroma. P. G. SKILLER. *Surg. Clin. N. Am.*, 1923, xi, 22.
- Microtome of the costal cartilages after typhus and recurrent fever. A. V. SCHRAMM. *Westsch. Chir. program abstr.*, 1923, i, 51.
- Pain in and referred from the sacro-iliac joint. S. G. THOMAS. *Northwest Med.* 9 5, xiii, 60.
- Malignant chondroma in the sacrocoxygeal region, and contribution to the genesis and localization of malignant chondroma in general. L. RYCK and W. AERTS. *Beitr. Klin. Chir.* 19 2, cxviii, 6.
- Symptoms and diagnosis of coxalgia. J. P. LAROUS. *Can. J. Med.* 1923, i, 142.
- The pathology of necrosis of the lower extremity in typhus fever. A. GONJAVITZ. *Moscow M. J.* 9 2, 1, 36.
- Tuberculosis of the hip joint. G. P. MULLER. *Surg. Clin. N. Am.* 1923, xi, 9.
- Tumorous fixation of the hip in childhood. report of one. D. M. PETER. *J. Am. M. Ass.* 1923, lxxx, 540.
- The etiology of Perthes disease and traumatic dislocation of the hip in childhood. M. REINER. *Deutsche Ztschr. f. Chir.* 1923, cxxiv, 416.
- Reckler's disease of the navicular bone with disappearance of the head of one femur in congenital syphilis. W. STELLER. *Arch. f. orthop. Unfall Chir.* 1923, xxi, 35.
- Coxa plana and tuberculous osteitis of the neck of the femur. M. CAMERATI. *Chir d'organi di movimento*, 9 2, vi, 665. [439]
- Two contributions to the etiology of osteochondritis psoasica. H. LAUBER. *Arch. f. orthop. Unfall Chir.* 1923, xxi, 589.
- Acute osteomyelitis of right femur suppurative arthritis of the right knee joint. A. E. RILLING. *Surg. Clin. N. Am.*, 1923, xi, 245.
- Anatomy of the capsule of the knee joint. HAAS. *Deutsche Ztschr. f. Chir.* 9 2, cxxiii, 30. [439]
- The etiological mechanism of osteochondritis dissecans in the knee joint. E. ROSENBERG. *Beitr. Klin. Chir.* 1923, cxviii, 57.
- So-called osteochondritis dissecans of the knee joint. J. RILANDER. *Acta chirurg. Scand.* 9 2, lv, 90. [440]
- A contribution to the pathology (arthritis deformans) and diagnosis (arthro-endoscopy) of ankyrosis arthropathica. BEHR. *Klin. Chir.* 1923, cxxvii, 39. [441]
- A foreign body in the knee due to trauma. NIEL. *Bull. et mém. Soc. anat. de Par.* 1923, xcvi, 518.
- A rare case of hereditary symmetrical osteitis of the lower limbs. M. CAMERATI. *Chir d'organi di movimento*, 1923, vi, 668. [442]
- Functional testing of the lower extremities with the aid of two spring balances. S. WIEL. *Zentralbl. f. Chir.* 1923, 1406. [442]
- A case of deformity of the leg and the right foot. BIRNBOIM. *Bull. et mém. Soc. anat. de Par.* 1923, xcvi, 499.
- Congenital absence of the fibula, congenital perular thorax of the neck of the femur. H. L. ROCHER. *J. de méd. de Bordeaux* 1923, xcv, 6.
- Contracted Achilles tendon. A. GOTTLIEB. *N. York M. J. & Med. Rec.* 9 3, cxvii, 37.
- Foot strain in golf. N. D. MARTINO. *N. York M. J. & Med. Rec.* 9 3, cxviii, 142.
- One hundred cases of club feet in the adult, with pedographic findings. J. GREENMAN. *N. York M. J. & Med. Rec.* 1923, cxviii, 64.
- Pes calcaneus and congenital bending of the leg. F. PEXARIER. *Ztschr. f. orthop. Chir.* 1923, xliii, 60.
- Statistics etiology and treatment of congenital club-foot before and after the war. KOCIS. *Arch. f. orthop. Unfall Chir.* 9 2, xxi, 27.
- Disturbances in the ossification of the calcaneum as distinct clinical entity. H. R. SCHULTZ. *Zentralbl. f. Chir.* 1923, xlix, 90.
- Isolated dislocation of the scaphoid bone of the foot. E. JUST. *Arch. f. Klin. Chir.* 9 2, cxi, 579.
- A half second metatarsal on the right foot. M. V. V. LAM. *Bull. et mém. Soc. anat. de Par.*, 1923, xcvi, 440.
- The etiology of Koehler disease of the heads of the metatarsal bones. G. WILKINSON. *Beitr. Klin. Chir.* 19 2, cxviii, 45. [442]
- A typical traumatic disease of the head of the second metatarsal bone. QUERN. *Deutsche med. Wochenschr.* 1923, xlviii, 44.
- Deutschlaender metatarsal tumors. H. BURCH. *Zentralbl. f. Chir.* 9 2, xlix, 839.

Fractures and Dislocations

- A new traction and suspension bone tong. E. J. HOOVER. *Surg. Gyneec. & Obst.* 1923, xxvii, 800.
- Fractures involving joints—question of movement. G. W. MILL. *Colorado Med.* 9 3, xxi, 34.
- Fractures with special reference to compound bone injuries. R. J. WILKINSON. *Internat. J. Surg.* 1923, xxxvi, 55.
- Physiological reposition of fractured extremities. E. SEIFERT. *Arch. f. orthop. Unfall Chir.* 1923, xxi, 7.
- The operative treatment of simple diaphyseal fractures. A. DUCAL. *Arch. d'Hyg. Municipal de la Habana*, 9 2, 4, 3.
- The present-day treatment of fractures. report of the discussion which took place at the meetings of the Royal Medical-Chirurgical Society of Glasgow held December and 5, 1923. J. W. DOWNIE, A. YOCVO, J. N. MARSHALL, and others. *Glasgow M. J.* 1923, xvii, 8.
- Massage in various dislocations, and fractures. P. KODOLITZ. *N. York M. J. & Med. Rec.* 1923, cxviii, 145.
- The treatment of pseudarthrosis and delayed callus for motion with fibro. K. WOLFGANG. *Med. Klin.* 9 2, xviii, 33.
- The treatment of old, ununited fractures of long bones, with special reference to the use of the osteopneumostic grafts. H. B. THOMAS. *J. Am. M. Ass.* 1923, lxxx, 509.
- Posterior dislocation of the shoulder joint with oblique palsy. T. T. THOMAS. *Surg. Clin. N. Am.* 1923, xi, 79.
- A new method of reduction for dislocation of the shoulder. I. F. DEHARDELIER. *Westsch. Chir. program abstr.*, 1923, 4, 3.
- Fracture of the upper internal angle of the scapula. MARMONTEL and VILLOR. *Bull. et mém. Soc. anat. de Par.* 1923, xcvi, 525.
- Supracondylar fracture of the humerus. E. L. ELIASOW. *Berg. Clin. N. Am.* 9 5, xi, 71.
- Isolated fracture of the humeral condyle with blockage of flexion, ablation perfect functional result. CAMERATI.

and Arson. Bull et mën Soc anat de Par 1922, xci, 304.

Forward dislocation of both bones of the forearm: the elbow review of the recorded cases and the literature, with report of case I. Chén. Surg Gynec & Obst 1922, xxiv 776.

The treatment of fractures of the forearm with great dislocation treated with pin traction. R. A. Koomans. Surg Gynec & Obst., 1922, xxiv 791.

Some new types of fractures of the radius. OUBAUD and JEA. Rev orthop., 1922, xxx 137.

Fracture of the radial head. traumatic forearm body free in the joint: extraction cure. J. HENRI. Bull et mën Soc anat de Par 1922, xcii, 470.

Ununited fracture of the radius (left): autogenous bone-graft relay: defective osteogenesis: fracture of graft. P. O. SCHILLERY. Surg Clin N Am. 9 3, 10, 207.

Fracture of the styloid process of the ulna. H. R. SCHULZ. Deutsche med Wchnsch. 1922, cxviii 8.

Fracture of the trapezium of the right hand. F. MASSENET. Bull et mën Soc anat de Par 9, xcii, 577.

The treatment of central luxations of the femur. O. WÄRNBERG. Klin Wchnsch. 1922, 1, 2223.

A new method of treating irreducible acquired or congenital hip dislocations. A. LÖNN. N York M J & Med Rec. 9 3, cxvii, 20. [443]

The Lorenz dislocation operation. A. D. ASHLEY. N York M J & Med Rec. 1922, cxvii, 36. [444]

Old dislocation of the hip treated by open incision. G. F. MILLER. Surg Clin N Am. 1922, 3, 211.

The treatment of old congenital hip dislocations. C. DEUTSCHLAENDER. Deutsche med Wchnsch. 1922, xlvii, 1476. [445]

Fracture of the head of the femur with dislocation on the dorsum of the ilium. G. HYNDLICH. J Am M Ass. 1922, lxxx, 469.

Fractures of the femoral neck. F. BOHRINGER. Klin Wchnsch. 9 3, 1, 2532.

The treatment of subcapital fractures of the neck of the femur. C. E. JAMES. Br J Clin Surg. 1922, cxvii, 432.

Treatment of fractures of the shaft of the femur by traction and suspension. M. READE. Internat J Surg. 1922, xxxv 437.

A case of horizontal inferior luxation of the patella. A. HEDENRUB. Zentralbl f. Chir. 1922, 1, 61.

A new splint for fractured patella. H. C. MARLAND. J Am M Ass. 1922, lxxx 39.

Fracture of the semilunar cartilage of the knee with frange pinching, ablation of cartilage: recovery. P. G. BELLIER. Surg Clin N Am. 1922, 3, 197.

Compound double fracture of the leg with primary closure. T. T. THOMAS. Surg Clin N Am. 1922, 3, 83.

Compound fracture of the tibia: fracture of the patella and condyles of the femur, with secondary suppurative arthritis and destruction of the knee joint, amputation of the thigh and closure by secondary suture. J. H. JONES. Surg Clin N Am. 1922, 3, 105.

Bone block of extension of the knee due to fracture of the astragali. P. G. BELLIER. Surg Clin N Am. 1922, 3, 106.

Isolated metatarsal phalangeal luxation of the fourth toe. MOCCHET and BRYAN. Bull et mën Soc Anat. de Par 1922, xcii, 440.

Surgery of the Bones, Joints, Muscles, Tendons, Etc.

Inoculation tuberculosis and its surgical treatment. G. STEIN. Wchnsch Wchnsch. 1922, xxiv 80.

A review of the treatment of tuberculosis in the surgical clinic at the University of Moscow during the last thirty-five years. SEMENOV. Verhandl d Kong Russ. Chir. Petrograd, 1922.

Some points in reconstructive surgery. G. R. GORRUCK. Practitioner 92, cx, 456. [446]

The anatomical processes in the regeneration of tendons and in the plastic repair of tendon defects by tendon, fascia, and connective tissue: an experimental study. E. SCHWARTZ. Deutsche Zeitschr f. Chir. 1922, cxviii, 302. [447]

The principles of bone graft surgery. A. E. MCKINNON. Med Press, 1922, 2, 3, 7.

The fate of bone transplants in the growing organism. P. G. KORMUS. Verhandl d Kong Russ. Chir. Petrograd, 1922.

Parallel removal: new technique in osteotomy. A. WERNER. Arch f. orthop. Unfall Chir. 1922, xxi, 309.

The phlegm of bone cavities with free transplants of fat. G. LÖNN. Deutsche Zeitschr f. Chir. 1922, cxviii, 305. [448]

Acute osteomyelitis treated by early incision, recovery. P. B. KIRBY. Lancet, 19 3, cxvii 254.

The present status of the treatment of bone and joint tuberculosis. M. FLAHER. Zentralbl f. Chir. 1922, 1, 2223. [449]

The results in ten years experience with iodiform resin treatment of myeloid tuberculosis by the method of Hots. G. LÖNN. Deutsche Zeitschr f. Chir. 1922, cxviii, 305. [450]

Synovectomy in chronic infectious arthritis. P. P. SWETT. J Bone & Joint Surg. 1922, xxi.

A method of fabricating plastic operations on the distal tibia. F. LINDEN. Zentralbl f. Chir. 1922, 1, 2223. [451]

New arthrodesis of the shoulder. O. E. SCOTT. North-bery. Chir. Gynec. 1922, 2, 15. [452]

Arthroplasty and excision in the treatment of ankylosis of the elbow. W. R. MACAULEY. Surg Clin N Am. 1922, 3, 197. [453]

Resection of the elbow for abel injury: osseous reproduction: functional recovery. P. A. PETERSON. Bull et mën Soc. anat de Par 1922, xcii, 460.

The operative treatment of ankylosed radial (paralytic) by tenodesis of the paralyzed extensor muscles of the forearm. V. DAMMEYER. Br J Clin Surg. 1922, cxvii, 437.

Certain phases of surgery of the hand. T. W. MANN. Surg Clin N Am. 1922, 3, 197.

The use of the index finger for the thumb. J. DUNN. J Bone & Joint Surg. 1922, xxi, 99.

Partial endoneurial resection in the treatment of spastic contractures of the hand in infantile hemiplegia. R. WERNER. Verhandl d Kong Russ. Chir. Petrograd, 1922. [454]

The Morrison plastic for contractures of the fingers. H. RABIN. Br J Clin Surg. 1922, cxvii, 437. [455]

Lengthening of the extremities. M. ZIVKOV. Deutsche med Wchnsch. 1922, xlvii, 1475.

The operative treatment of cysts vera stabiles. E. BERNARD. Zentralbl f. Chir. 1922, 1, 2223. [456]

The operative treatment of abnormal clefts and rotation of the hip after infantile paralysis. I. LÖNN. Zentralbl f. Chir. 1922, 1, 2223. [457]

The formation of a new hip joint by plastic modeling of the bone. P. GEAR. Arch f. orthop. Unfall Chir. xxi, 309. [458]

Amputation at the thigh. R. FROCHNER. Seman med. 1922, xxi, 307.

The advantages of extruding the head of the fibula in amputation of the leg, on the basis of personal experience.

- A. LEHRMANN. Arch f orthop Unfall Chir 92
[446]
Pen articular fixation of the knee joint O E. SCHULZ
Camp Med Zsch 9 lx, 936
Operative substitution of the patella S KORMAN
Zentralbl f Chir 9 xlix, 857
Amputation of the leg & the knee by De la Vedova
method A. TORALDO Cac med Permana, 9 3, 4, 70
Two cases of tendon necrosis following osteotomy in
the leg J. MUELLER Arch f orthop Unfall Chir
92, xii, 993
The conservation of muscles in paralytic deformities of
the foot P W. ROBERTS J Bone & Joint Surg 9 3
[446]
The question of operative procedures for deformities of
the foot G. EISENBERG Verhandl d Russ Chir Pirogoff
Ges 92 [446]
The modern treatment of club-foot, E. VO. DER OETTER
Wratelschey Westnik, Woldia, 92 p 54
The anatomical changes in the ankle in club-foot, and
the results of talus extirpation T. YUK Arch f orthop
Unfall Chir 92, xii, 3
The correction of congenital club foot E. H. BRADFORD
N York M J & Med Rec 1925, cxvii, 30

- The treatment of severe case of calcaneal spur TAKEN-
LER Med Klin 923, xii, 56
An operation for hallux valgus P W. ROBERTS J
Am M Am 9 3 lxxv, 540

Orthopedics in General

- An orthopedic operative table J V. AUSTIN Ztschr
f orthop Chir 9 xliii, 6
The modern scope of orthopedic surgery J E M. THOM
son Nebraska State M J 9 3, 12, 67
Orthopedic aspects of poliomyelitis C E. COO Am
J Surg 9 3 lxxv, 7
The field of muscle training in orthopedic surgery A
WINTER Dental Cosmos, 923, lx 57
Occupational therapy for arthritis L T. SWAIN Mod
Hosp 9 3 vi, 30
Recent advances in prosthesis technique J. MILEY
G. 923, 9 77
The results of exercises for the correction of postural
defects A J. COO N York M J & Med Rec 923
cxvii, 5
An unusual type of supporting corset F S. AFFEL
Ztschr f orthop Chir 92 xliii, 5

SURGERY OF THE SPINAL COLUMN AND CORD

- A rare anomaly of the cervical vertebrae A. WALLGREN
Zentralbl f Chir 9 xlix, 578
A case of congenital anomaly of the spine G. WEINER
Ztschr f orthop Chir 923, xliii, 3
Congenital curvature of the spine as an intra terine
defect of eight bearing M. HACHENBROCH Arch
f orthop Unfall Chir 923, xlv, 566 [446]
Scoliosis CALVAERTS Arch med belges 9 3 lxxvi,
114
Secondary effect of scoliosis on the internal organs T.
TORELL J Med Am Georgia, 923, xii, 77
Structural scoliosis complicated by paralysis of the
lower limbs S. KILBINGER J Bone & Joint Surg 9 3
[446]
Injuries to the spine not involving the cord O J F.
J. Ives State M. Soc 92 xii, 45
The diagnosis and treatment of minor injuries to the
lumbar spine and sacro-iliac joints M B. COOPERMAN
N York M J & Med Rec 923, cxvii, 59
I. Fracture of the spine especially by indirect force
occurring in the cervical portion & the typical location
II. A case of Kummel fracture of the dorsal vertebra
F. HARTIG Deutsche Ztschr f Chir 9 cxviii,
142
Vertebral fractures with cord involvement J W.
MARTIN J Iowa State M Soc 9 2, xii 454
Fracture of the spine with cord involvement W J.
MARTIN J Bone & Joint Surg 923, xii [446]
An unusual case of typhoid spine with symptoms of
spinal cord affection H. TURNER Brit M J 9 3 4
[447]
Spondylitis in children L. LEONIEUX Verhandl d
Russ. Chir Pirogoff-Ges Petrograd 9
Leitumous disease of the vertebrae E. WILCKNER
Zentralbl f Chir 9 xlix, 737

- A case of bridge formation in the lumbar portion of the
spine in tuberculous spondylitis G. SCHROEDER Klin
Wochenschr 9 4, 1335
Albee operation in Pott's disease and its modification
in children and in the presence of fistulae G. JAMETON
Schrumpf chir Sect d Gesellschaft f theor klin Med
Austria, 9
A propping operation on the vertebral column thoughts
on the operative treatment of spondylitis V. HOFFMANN
Zentralbl f Chir 923 xlix, 443 [447]
Albee operation in tuberculous spondylitis F. ROSE
Wratelschey Dyelo, 923, xii, 3
The problem of gibbus and the Albee operation B.
FRIEDL Bratislava lekarske listy 922, ii, 37
Contribution to subject of suppurative osteomyelitis of
the spine E. FRANKEL Arch f klin Chir 9 cxviii,
80
Traumatic osteomyelitis of the spinal column and of
the ribs in infancy E. DREYER Med tsehr f kinderh
923 cxvii, 496
On lumbar arthritis A. LIFER Am J Clin Med 923
[447]
The so-called railway spine F W. Carruthers South
M J 923, xvi, 6
Is the surviving sensibility of the last sacral segment
differential diagnostic sign between extramedullary and
intramedullary affections of the spinal cord? W. KIEPPELA
Duodecim, Helsinki 9, cxviii, 302
Report of case of epidural abscess of the spinal canal
E. M. GREEN Pennsylvania M J 9 3, xvi, 203
A gunshot wound of the spinal cord laminectomy cure
R. SIMON Rev de med y chir de la Habana, 9 3,
xxvii, 5
Bridshaw lectures on the surgery of the spinal cord W.
THORBER Lancet, 9 cxix, 33

SURGERY OF THE NERVOUS SYSTEM

The stimulation theory of the pathogenesis of trophic disturbances in injuries of the peripheral nervous system of the extremities in the light of the facts of the newest surgical therapy. A. I. POLAKOV. *Westnik Chir i pogras oblastei*, 1932, 1, 7.

The effect of the ablation of the superior cervical sympathetic ganglia upon the course of life. M. L. ALFROVICH. *Endocrinology*, 1932, vii, 74.

Transplantation of spinal nerve roots in flaccid paralysis. L. P. KOTLOV. *Eurist. int.*, 1932, 4, 44. [448]

Neuroma of the noncolospiral nerve above the elbow. Neurolysis. P. G. SKILLERY. *Surg. Clin. N. Am.*, 1932, lx, 3.

Peri-arterial sympathectomy. E. P. LERMAN. *Ann. Surg.*, 1932, lxxvi, 30. [449]

Peri-arterial sympathectomy. A. L. HALSTAD and J. CHRISTENSEN. *J. Am. M. Ass.*, 1932, lxxx, 173. [448]

Arterial decortication. C. L. CALLAGHER. *Ann. Surg.*, 1932, lxxvi, 5. [449]

The healing of trophic ulcer after operation on the sciatic nerve. M. KOTLOV. *Westnik Chir. pogras oblastei*, 1932, 1, 103.

The surgical treatment of chronic sciatitis. W. J. TAYLOR. *N. York M. J. & Med. Rec.*, 1932, cxvi, 602. [450]

Cavernous angioma in the peripheral nervous system. R. SOHNKE. *Deutsche Zeitsch. f. Chir.*, 1932, cxxxviii, 65. [450]

MISCELLANEOUS

Clinical Entities—General Physiological Conditions

The spectra of starvation. L. VASSILEVSKI. *Westnik Uchenovo Gubavotvorch.*, 1932, 1, 1.

The influence of the hunger, cold, and poverty of the masses on present-day surgery. W. SCHLACK. *Verhandl. d. Russ. Chir. Kongr. Petrograd*, 1932.

The quantity of total acetone and beta-oxibutyric acid in the urine in acidosis; different methods of determining acetone. M. LARSEN, H. LARSEN, and F. NEPPEST. *Presse med. Par.*, 1932, xxxi, 33.

Cases of delayed and immediate asphyxiatic shock with notes on the circulatory phenomena. J. FAWCETT and J. A. RYLE. *Brit. M. J.*, 1932, i, 315.

Urticaria and hemiparesis: the rôle of the sympathetic nervous system in the localization of certain clinical manifestations of shock. J. LEBROVETZ and T. ALAYOJANOV. *Presse med. Par.*, 1932, xxxi, 47.

Buccal shock. L. A. KERNIK. *Verhandl. d. Russ. Chir. Kongr. Petrograd*, 1932.

Experimental investigation on the prophylaxis and therapy of surgical shock. T. KIKUCHI. *Zeitsch. f. Japan. Chir. Geseh.*, 1932, xxxviii, 663.

Postoperative tetany and progeria. H. W. STEVENS. *Vierteljahrsschr. Gerontol.*, 1932, lxxvi, 1030.

Tissue necrosis due to an alkali patch. F. GRAM. *Deutsche med. Wochenschr.*, 1932, xlviii, 383. [450]

Tetanus of severe superficial burns in children. B. ROZENTHAY and G. BOTO. *Am. J. Dis. Child.*, 1932, xlv, 161.

The so-called sweat gland abscesses of the anils. F. ROSE. *Klin. Wochenschr.*, 1932, i, 283.

Ebriety abscess. J. DREIER. *vo* and J. W. TORRES. *Semin. med.*, 1932, xxi, 191.

Zinc ions in peptic abscess. M. WARDER. *Practitioner*, 1932, cx, 95.

Observations on the origin, causation and treatment of rodent ulcer. M. PAUL. *Med. J. Australia*, 1932, i, 85. [451]

Contributions to the etiology and treatment of leg ulcers. S. GERSH. *Gyógyászat*, 1932, p. 100.

The treatment of callosal ulcer of the leg by injections. F. von DER HORST. *Münch. med. Wochenschr.*, 1932, lxxxviii, 1603.

The treatment of Oriental sore by phosphonated oil. A. CASTELLANI. *Brit. M. J.*, 1932, i, 383.

Carbuncle of the back of the neck; excision of the carbuncle by the electrocautery knife, followed by Carrel

Dakin treatment of the wound. J. H. JORDON. *Surg. Clin. N. Am.*, 1932, lx, 23.

The treatment of carbuncle. F. ROZENTHAY. *Deutsche Arch. de med., chir. u. spec.*, 1932, x, 373.

Tetanus following gunshot wounds. J. F. DREIER. *Westnik Chir. i pogras oblastei*, 1932, 1, 60.

Bubo of Vater (ingradial lymphadenitis). A. P. CHAVAKIA. *Report de med. y chir.*, 1932, xiv, 52.

The treatment of some (cancerous) eruptions, particularly during the stage of gangrenous ulceration and sequestration. L. A. GOLJANITSKY. *Sbornik d. Goschik. i. thior. prest. Med. Akad.*, 1932.

A contribution to our knowledge of some. S. von BALOGH. *Woch. med. Wochenschr.*, 1932, lxxxviii, 1742. [450]

Gangrene in typhus fever. A. DREIER. *Woch. schweizer. Dyk.*, 1932, cx, 35.

Conservative operative methods in the treatment of gangrene of the lower extremities following typhus. A. GOLJANITSKY. *Wochenschr. d. Russ. Chir. Kongr. Petrograd*, 1932, 1, 1.

The relationship between trauma and tumors. C. LACROIX. *Polich. Recue.*, 1932, xxi, 202 post., 290.

Intramuscular lipoma. A. MARY KOLB. *Brit. Chir.*, 1932, cxviii, 405.

A case of multiple myxomas. G. MCCORMICK. *Am. J. M. Sc.*, 1932, cxv, 24. [451]

Hodgkin's disease. LORRAINE. *Brit. et med. Soc. med. de Par.*, 1932, xlv, 483.

Cancer. W. M. HANSEN. *Thron. M. J.*, 1932, xlv, 69.

Review of the present status of the cancer problem. M. BEATTY. *Semin. med.*, 1932, xxi, 301.

Remarks on cancer. A. D. WILLIAMS. *Med. Herald*, 1932, xlii, 54.

Biological evidence for the inheritability of cancer in man: studies in the incidence and inheritability of spontaneous tumors in mice. M. SALT. *J. Cancer Research*, 1932, vii, 107.

The previous state of health of persons with cancer: tumors and cancer—tuberculosis and cancer. K. HANSEN. *Hosp. Tid.*, 1932, lxv, 35.

Cancer as preexisting disease. J. C. BLOOMFIELD. *Semin. M. & S. J.*, 1932, cxxxviii, 226.

The mechano-chemical theory of the development of malignant tumors. N. KROTKOVA. *Verhandl. d. Russ. Chir. Kongr. Petrograd*, 1932.

The function of connective tissue in the experimental production of cancer. R. BRIDGES. *Arch. i. path. Anat.*, 1932, cxxxviii, 481. [451]

The effects of the X rays upon the transplantation of mouse carcinoma. C ASAMI *Zschr. f Japan chir Gesellsch* 923, xxiii, 625

The symptomatology of cancer. E P ROBINSON *Am Med*, 923, xxx, 97

Cancer as an old patient problem. H F D Y *Boston M & S J* 1923, clxxxviii, 215

Progress and results in cancer control. F L HOFFMAN *Boston M & S J* 1923, clxxxviii, 21

The limits of spontaneous healing of malignant tumors in the animal and human organism. N P TRINKELE *Arch f klin. Chir* 923, cxxiii, 51

Cystic ectoplasmic carcinomas as compared with the sarcomas form. F J LANG and W KRAUS *Frankfurt Zschr f Path.*, 923, xxviii, 536 [452]

Familial hyperplasia and bone destruction in generalized carcinomas. P KLEINER *Surrg Gynec & Obst.*, 923, xxvii, [452]

Cancer and the more recent methods of treatment. J M BAKER *South M & S J*, 923, lxxxv, 26

The early treatment of cancer. H SALTZBERG *J Am M Ass* 923, lxxx, 448

The most important points of view of the recent invention and treatment of cancer. K FRIEDRICH *Deutsche Zschr f Chir* 9 2, clxxxv, 289

The treatment of superficial cancer, with statistics and technique. D T QUIGLEY *Ann f Roentgenol* 9 3, 2, 14

The histogenesis of the cancer. H T DEHLMA *Zschr f Krebsforsch* 923, xix, 5

Ganglionic sarcomas of the axilla. J P TOURNEUX and C CARANFI *Bull et mèm Soc anat de Par* 923, xcii, 510

Lipoblastosarcoma. R KORTSCHEVER *Zentralbl f allg Path. path Anat* 9 xxxiii, 145

Sera, Vaccines, and Ferment

The diagnostic value of the serological intracutaneous reaction in carcinoma. E SCHÖTZ *Med Klin* 923, xxvi, 374

The treatment of staphylococci with horse serum. W RITTER *Klin Wchnsch* 9 4, 333

The problem of anti streptococcus serum. A WOLFF *Karlsru Arch de med chir u espec* 9 3, 30

Studies on the blood ferments in man and animals in sarcoma and certain sarcomatous. J GROS *Acta med Scand* 9 3, 2, 285

Blood

On the existence of more than four erythrocytic groups in human blood. C G OETTERICH and J G HICK *Bull Johns Hopkins Hosp* 9 3, xxvii, 37 [453]

The influence of oil of turpentine upon leucocytes. W J NIXON *Arch Anatrachschi Med Westn.* 9 4, 40

Blood destruction during exercise. III. FARRAR and G O BROS *J Exper Med* 1923, clxxxv, 87

Blood destruction during exercise. IV. The development of equilibrium between blood destruction and replacement after period of training. G O BROS *J Exper Med* 1923, clxxxv, 207

Functional tests of the circulation and their significance. W W HENCKES *N York State J M* 9 3, xxix, 53

Blood sugar standards. Part I. Normal and diabetic persons. H GRAY *Arch Int Med* 923, xxxi, 24

Blood sugar standards. Part II. I conditions neither normal nor diabetic. *Arch Int Med* 923, xxxi, 59

Does menstruation influence blood concentration? M TYLER and F P UNDERHILL *Am J Obst & Gynec*, 923, 55 [453]

Blood chemical analysis in diagnosis and treatment. F B JOSEPH *J South Carolina M Ass* 9 3, xix, 403

Blood examinations in twelve cases after iodiform iodine injections. NIKOLAI *Verhandl d Kong Russ Chir Petrograd* 923

The value of blood chemistry in clinical diagnosis. B C F AND WILSON *M J* 9 3, xii, 39

The importance of the relationship between the blood pressure and the number of cells in health and disease. I LARAS *Riforma med* 923, xxix, 5

The theoretical basis and practical application of blood-pressure estimations in surgical operations. A LARAS *Klin Beir klin Chir* 9 3, clxxxv, 29 [453]

Investigations regarding vasoconstricting substances in the blood. W HILTZ *Klin Wchnsch* 9 4, 4

The influence of various factors in parenchymatous hemorrhage. I A GOLY *Stetsingb d Gendtsch f theor prakt Med Austrsch* 9

The control of capillary and parenchymatous bleeding. P ALBRECHT *Wien klin Wchnsch* 9 3, xxix, 4

The total circulating volume of blood and plasma in cases of chronic anemia and leukemia. N M KAUTZ *Am J M Sc* 923, cliv, 4

Treatment of leukemias by means of the X rays. J W LAYMAN *J Med Ass Georgia* 9 3, xii, 5

The transference of blood in acute posthaemorrhagic anemia. A A NICOLA *Rev Med rev* 923, xxxiii, 89 [454]

A simple procedure for blood transfusion. HENRI *Arch franco-belges de chir* 923, xxvi, 1

The transfusion of blood from untransfused donors. L J UNDER *Laryngoscope* 9 3, xxxiii, 45

Intraperitoneal transfusion with citrated blood: an experimental study. D M SEPTENTON and J M SANJON *Am J Dis Child* 9 3, xxv, 7 [454]

Blood and Lymph Vessel

An extremely large aneurysm in an infant 12 months old. A MOCHEZ *Bull et mèm Soc anat de Pa* 9 3, 1

The presence of vasoconstricting substance in the blood serum of persons with endarteritis obliterans. M N VORON *Westnik Chir posras oblates* 9 4, 96

Fatal thrombo arteritis of the right middle cerebral artery of uncertain causation. F P WATSON *Brit M J* 9 3, 34

Thrombophlebitis of the lateral axon. M VVO *Rev med d Uruguay* 923, xxi, 14

Wounds of the common carotid. D CALLEAS *Arch tal de chir* 9 4, 433 [454]

A case of arteriovenous aneurysm of the subclavian artery. A rev. anal of the circulation of the arm. contribution to the functional transformation of blood vessels. II. TIGER *Zentralbl f Chir* 9 3, xli, 50 [455]

Warmer and electrolytes of aortic aneurysm—report of case. R D FORD *Therap Gaz* 9 3, 3, xxxix, 01

Abdominal aortitis. M G OLARICHA *Cron med* 1923, 9 2, xxxix, 336

Infarction of the mesenteric vessels following aortic thrombotic intestinal resection. death infarction of both kidneys and of the spleen found at autopsy. J BRAUER *Bull et mèm Soc anat de Pa* 9 3, xcii, 499

Rupture of the renal artery and vein by slight injury. L M ATTENBERG *Brit M J* 9 3, 3, 34

Partial gangrene and congested aneurysm. F DUCKER *Arch f orthop Unfall Chir* 9 3, xii, 83

- Medical men and institutions of Petrograd in 1917 and 1918 M ZILAROVA Minnesota Med 9 3 vi, 74
 The British voluntary hospitals today V BURNETT Med Hosp 9 3, xi, 3
 Hospital development in Holland J L C WORTHMAN Med Hosp 1923, xi, 53
 Hospital developments in Germany and Austria J GUCKER Med Hosp 9 3, xi, 145
 Hospitals in Japan H J HOWARD and W G LEROY Med Hosp 9 3, xi, 19
 The new children pavilion of Mount Sinai Hospital, New York A W BRUNNER and S S GOLDENBERG Med Hosp 1923, xi, 36
 The new plant of the Vanderbilt University Medical School and Hospital, Columbia, Tennessee, and the Roosevelt Med Hosp 9 3 xi, 39

- Royal Victoria Hospital's metabolism service E H MASON and H E WHEATON Mod Hosp 9 3, xi, 43
 Louis Pasteur I GERRARD-FIELDS N York M J & Med Rec 9 3, xi, 3
 Life and work of Louis Pasteur C C BONE Calcutta M J 9 3, xi, Supp 3
 Pasteur first patient M W TAYLOR N York M J & Med Rec 9 3, xi, 35
 Charles M Bursky C H PECK Surg Gynec & Obst 9 3, xxvi, 410

Legal Medicine

- Responsibility for payment of physicians in accident cases From Glasgow, 7 Atlantic Rep p 547 [461]

GYNECOLOGY

Uterus

- Uterine secretion: an experimental investigation into its effect upon the coagulation of the blood I KROUSE Surg Gynec & Obst, 9 3, xxvi, 7 [462]
 Inversion of the uterus and its conservative treatment by anterior colpotripsy G MACVICAR Gynec et Obst 19 3, vi, 37
 Vaginalization of the testes and its complications from B TROCHIMOWITZ Deutsche Ztschr f Chir 9 3, xi, 36 [462]
 The diagnostic significance of uterine hemorrhage M DONALDSON Practitioner 9 3, xi, 63
 Radium in the treatment of uterine hemorrhage of non malignant type E A WILSON Am J Obst & Gynec 1923, 28 [463]
 Radiation in the treatment of menorrhagia D A KERRICK J Arkansas M Soc 9 3, vi, 75
 The X-ray treatment of uterine hemorrhage and fibroid tumors J S DYER J Med Ass Georgia, 9 3, xi, 50
 Certain varieties and complications of uterine fibromata M E BONARETTI Arch di ostet ginec 9 3, xiv, 74
 The present status of surgery in the treatment of fibromatous uteri S E TRACY Am J Obst & Gynec 1923, v, 35
 The indications for and the results of myomectomy A E GILES J Obst & Gynec Brit Emp 9 3, xxv, 463 [463]
 The modern scope and technique of myomectomy V BERRY J Obst & Gynec Brit Emp 9 3, xxv, 50 [463]
 Chorioepithelioma E LOURIE Beitr Klin Chir 1923, cxvii, 56
 The treatment of hydatidiform mole and chorio-epithelioma, with consideration of the relative frequency of each O A GORDON Surg Gynec & Obst 9 3, xxvi, 41 [464]
 Chronic endocervicitis and its treatment J W BURKE J Obst & Gynec Brit Emp 9 3, xxvi, 69 [465]
 The cervix a focal point of infection G K DICKINSON Am J Obst & Gynec 9 3, 4
 Problems concerning infections of the cervix, the body of the uterus, and the fallopian tubes A H CURTIS J Am M Ass 9 3, lxxx, 6
 The diagnosis of cancer of the uterus O C NELSON Minnesota Med 9 3, vi, 74 [466]
 Radium treatment in cancer of the cervix C D PHOENIX and W R CURTIS J Michigan State M Soc 1923, xiii, 80

- The use of radium in treatment of cancer of the cervix O D HALL J M Ass Georgia, 9 3, xi, 45 [466]
 Some points in the technique of hysterectomy for cancer of the cervix J D FOURMESTRAUX Bruchles med 9 3, iii, 306
 Cancer of the cervical stump after hysterectomy J C ARMAND Bol del Soc de obst y ginec de Buenos Aires 9 3, 75

Adnexal and Peri Uterine Condition

- Adnexal disease in childhood and its importance in the differential diagnosis of pyelitis I SCHIRO Med Klin 9 3, xviii, 77
 Varicocele of the broad ligament J W MILLER Zentralbl f Gynak 9 3, xlv, 370
 Varicocele of the broad ligament or pelvic ancocele E E OELMANN Zentralbl f Gynak 9 3, xlv, 374
 Fibroma of the round ligament G GART Polichin Roene 9 3, xvi, ser prat 77
 Torsion of the uterine adnexa M COHEN J Am M Ass 9 3, lxxx, 38
 The lipid content morphologically demonstrable in human fallopian tubes I SERRITO Arch di ostet ginec 9 3, xi, 8
 The radiation of pain in lesions of the fallopian tube M MARCUS Brit M J 9 3, 4, 8
 Multilocular parovarian cyst J B DEXTER Surg Clin N Am 9 3, iii, 111
 Ruptured graafian follicle simulating pyelitis I S R VON Surg Clin N Am 9 3, iii, 275
 Hydatid cyst of the ovary with peritoneal irradiation P A MORIT Bull et mém Soc Anst de Par 9 3, xxi, 507
 Fibromata of the ovary M R HOOD Surg Gynec & Obst 9 3, xxvi, 47 [467]

External Genitalia

- Fibrosarcoma of the left labium majus R R LOWELL J Am M Ass 9 3, lxxx, 375
 Bilateral resection of the pudendal nerves for vulval pruritus V W MARKOFF Resch Gynak Westph, 9 3, 83 [467]
 A clinical investigation of vulvovaginitis I F STEIN Surg Gynec & Obst 9 3, xxvi, 43
 A case of extensive gangrene of the vulva following typhus M S SCHIRM Westph Chir 9 3, 75

Concavit malformation of the lower part of the aorta (complete transverse closure above the lumbar) hernia-colon hematemesis (122) Bull et med. Soc. de Par. 19 1914, 174

A rare malformation of the upper part of the aorta partial transverse closure (123) N. O. CHENET Bull et med. Soc. de Par. 19 1914, 175

A small cyst having cubical epithelium (124) T. W. HARRIS Bull et med. Soc. de Par. 19 1914, 176

Vesicovaginal fistula (125) A. HARRIS Med. J. Australia, 9, 3, 1

Transvaginal treatment of vesicovaginal fistula (126) CH. ESPAGNOL 9, 3, 2, 6

Miscellaneous

The relation of the secret of menstruation to environment (127) W. LUTZ N. O. CHENET Endocrinology 19, 3, 17, 57

Birth of C. D. HARRIS, Chloroform J. 19, 3, 1, 461

The P. M. fatal low carbon level in primary (128) M. L. BAKER J. Am. M. Ass. 9, 3, 1914, 174

The diagnosis and relief of urethra (129) A. H. CHAMBERLAIN Am. M. Ass. 9, 3, 1914, 175

Experimental investigation of the value of the various commercial ovaries (130) J. H. LEECH and W. HARRIS Endocrinology 9, 3, 17, 4

The diagnosis of gynecological changes in the true pelvis by means of a comparison of the two pictures (131) P. L. LEECH, C. D. HARRIS, and W. HARRIS 19, 3, 1, 52

Genesis of uterine 7. hemorrhage in women (132) A. CHAMBERLAIN W. HARRIS 19, 3, 1, 174, 175

Conservative gynecology (133) S. REICHERT Proc. de la Soc. Madrid, 9, 3, 1914, 177

An article on the sal. tumor of uterine cancer and the history of the treatment of the uterine cancer (134) H. BELLERUS Stockholm, med. W. HARRIS 19, 1, 1, 1

The treatment of early cancer of the female genital tract and breast (135) P. T. J. VAN DER WEGE 9, 3, 1914, 178

The association of different malignant tumors and to hemorrhage in the same organ (136) A. H. CHAMBERLAIN, S. H. CHAMBERLAIN, and W. HARRIS 19, 3, 1, 179

Some gynecological experiences in southern Australia (137) A. H. CHAMBERLAIN, S. H. CHAMBERLAIN, and W. HARRIS 19, 3, 1, 180

Actinotherapy in gynecology (138) J. H. LEECH and W. HARRIS 9, 3, 1914, 181

OBSTETRICS

Pregnancy and its Complication

Fetal death (139) O. M. SMITH M. J. S. 19, 3, 1914, 182

Acute nasal cancer (140) R. FOWLER Med. J. Australia, 9, 3, 1, 1

A nasal cancer (141) R. W. CHAMBERLAIN Med. J. Australia, 19, 3, 1, 183

The above and below of acute nasal work (142) A. M. WILSON Med. J. Australia, 9, 3, 1, 184

Metabolism for birth in early (143) L. CHAMBERLAIN, S. H. CHAMBERLAIN, and W. HARRIS 19, 3, 1914, 185

Alimentary peritonitis of the fetus (144) J. H. LEECH and W. HARRIS 19, 3, 1914, 186

Valvular pregnancy (145) J. H. LEECH and W. HARRIS 19, 3, 1914, 187

The uterine wall in pregnancy (146) S. W. HARRIS Med. J. Australia, 19, 3, 1914, 188

The pathology of the uterus of the fetus (147) J. H. LEECH and W. HARRIS 19, 3, 1914, 189

Ischemic infarction in newborn infants and their mothers (148) J. H. LEECH and W. HARRIS 19, 3, 1914, 190

True ectopic and renal ectopic (149) W. E. HARRIS Med. J. Australia, 19, 3, 1914, 191

A new procedure in the treatment of ectopic (150) J. H. LEECH and W. HARRIS 19, 3, 1914, 192

Suggestions regarding the treatment of placenta previa (151) T. A. CHAMBERLAIN Bull. de la Soc. de Obst. et Gynec. de Buenos Aires, 1914, 193

Periodic variations in spontaneous contractions of the uterus in relation to the uterine cycle and early pregnancy (152) J. H. LEECH Bull. de la Soc. de Obst. et Gynec. de Buenos Aires, 1914, 194

Pyrexia of pregnancy (153) V. H. FOWLER Med. J. Australia, 19, 3, 1914, 195

Gynecological study of the fetus in retroplacental hemorrhage (154) L. CHAMBERLAIN, S. H. CHAMBERLAIN, and W. HARRIS 19, 3, 1914, 196

Uterine hemorrhage complicating pregnancy (155) L. CHAMBERLAIN, S. H. CHAMBERLAIN, and W. HARRIS 19, 3, 1914, 197

Spontaneous rupture of the body of the uterus during pregnancy (156) H. BELLERUS Am. J. Obst. & Gynec. 19, 3, 1914, 198

A case of extra-uterine pregnancy (157) L. CHAMBERLAIN, S. H. CHAMBERLAIN, and W. HARRIS 19, 3, 1914, 199

Extra-uterine pregnancy (158) T. W. HARRIS Med. J. Australia, 19, 3, 1914, 200

A case of extra-uterine pregnancy (159) C. L. CHAMBERLAIN, S. H. CHAMBERLAIN, and W. HARRIS 19, 3, 1914, 201

Chronic rhinitis following extra-uterine pregnancy (160) J. H. LEECH and W. HARRIS 19, 3, 1914, 202

The cause of fetal pregnancy and fetal (161) L. CHAMBERLAIN, S. H. CHAMBERLAIN, and W. HARRIS 19, 3, 1914, 203

A case of hemorrhage due to ruptured fetal pregnancy (162) L. CHAMBERLAIN, S. H. CHAMBERLAIN, and W. HARRIS 19, 3, 1914, 204

Immediate version delivery operation in cases of collapse following ruptured extra-uterine pregnancy (163) L. CHAMBERLAIN, S. H. CHAMBERLAIN, and W. HARRIS 19, 3, 1914, 205

Uterine pregnancy (164) L. CHAMBERLAIN, S. H. CHAMBERLAIN, and W. HARRIS 19, 3, 1914, 206

Uterine pregnancy (165) L. CHAMBERLAIN, S. H. CHAMBERLAIN, and W. HARRIS 19, 3, 1914, 207

Uterine pregnancy (166) L. CHAMBERLAIN, S. H. CHAMBERLAIN, and W. HARRIS 19, 3, 1914, 208

Labor and its Complication

Benign and low in the soap and water scrub in the preparation of parturient women for delivery (167) L. CHAMBERLAIN, S. H. CHAMBERLAIN, and W. HARRIS 19, 3, 1914, 209

The reaction to extracts of the posterior lobe of the hypophysis in pregnancy (168) C. L. CHAMBERLAIN, S. H. CHAMBERLAIN, and W. HARRIS 19, 3, 1914, 210

Report of a case of labor complicated by uterine cyst and abortion operation, spontaneous delivery recovery (169) R. A. HARRIS Med. J. Australia, 19, 3, 1914, 211

- Acute complete inversion of the uterus L W HAYMES
J Michigan State M. Soc 923, xxx, 75 [472]
- The question of cesarean section S A DRAWEK
Med. J. Walskowne Utaschenovo Sowjeta pri Gubadrawt
ide, 1921, p. 2.
- Incisions for, and technique of, cesarean section
H A MILLER Pennsylvania M J 923, xxvi, 89
- The chemical cesarean section under local anesthesia
with temporary fixation of the fetus E WALDSTEIN
Wien klin. Wchnsch 9 23, 85 [473]
- The management of the placenta in abdominal pregnancy
with case report W A JEWETT Am J Obst
& Gynec 923, v 76

Newborn

- Intracranial trauma in the newborn N B CAPON J
Obst & Gynec Brit Emp 922, xxx, 572
- Prenatal amputations R KUM Arch f orthop
Unfall Chir 922, xxx, 53
- Fetal malformations in case of dystocia due to asities
and retention of urine C LEHRER Bull et mēm. Soc
anat de Par 9 2, xxx, 43
- The association of fetal monstrosities and deformities
with placenta previa J P GREENHILL Surg Gynec &
Obst 9 3, xxvi, 327 [473]
- Intrapentoneal infusion WIEDELIN Deutsches med
Wchnsch 9 23, 577 [473]

Puerperium and Its Complication

- Puerperal occlusion of the mesenteric vessels and the
etiology of general thrombosis BUCURA Wien klin
Wchnsch 922, xxv, 218
- Puerperal sepsis T W LEECOMB Med J Australia,
1923, 1, 69
- Blood crises in pathologic and normal puerpera N P
COTTA Seneca med 923, xxx, 37
- Preventive treatment of puerperal fever by blocking
and postural methods S HANSEN Am Med 923,
xxx, 77
- The prognosis in puerperal infection HANSEN-SCHLAG
Münchener f Geburtak Gynaek 9 23, 80
- Anti-streptococcus serum in puerperal infection W
URVO Med Press, 9 3, cxv 35
- Hysterectomy in puerperal infection COUDRE J de
med de Bordeaux, 923, xxv 9
- The intradural reaction to tuberculin in the puerperium
and the newborn M L PÉREZ Seneca med 923, xxx,
123
- Aids in penicorrhaphy H STURGE Med Klin 9
23, 1435

Miscellaneous

- The service of an obstetrical clinic to the community
A H MOWER Am J Obst & Gynec 923, v 70
- The present standard of obstetrical practice in rural
Pennsylvania C G B THOROUGH Pennsylvania M J
9 3, xxvi, 283
- The value of ergot in obstetrical and gynecological prac-
tice with special reference to its present position in the
British pharmacopoeia H H DALE Proc Roy Soc
Med 9 3, xv, Sec Obst & Gynec
- The more important obstetrical emergencies met by the
general practitioner G V JAWYER Pennsylvania M J
9 23, xxvi, 34
- Blood transfusion in obstetrics W R BARNEY Ohio
State M J 923, xix,
- Observations on the Wassermann reaction in obstetrics
GAUJOUR and FOLLGHER Rev franç de gynéc. et
d'obst 922, xvi, 589
- A contribution to the study of the decidual reaction
J TORRES BLA CO Prog de la clin Madrid, 9 3, xxv
69

GENITO-URINARY SURGERY

Adrenal Kidney and Ureter

- Syphilis of the adrenals W H DEANEROCK Am J
Syphilis, 923, vi, 78
- Pathologic conditions in case of Addison's disease E
E HARVEY Brit M J 923, 1, 35
- Demonstration of patient in whom the left adrenal was
removed because of gangrene of the leg S S GREGORY
Wchnsch Chir pogram oblaten, 923, 85
- Hypoplasia paracortical O COVINGTON Ztschr f urol
Chir 923, xi, 69
- A case of bilateral subacute suppurative pneumococcal
pyelitis H HANSEN Ztschr f urol Chir 923,
xi, [474]
- Simple renal ectopia F CASTO Seneca med 923,
xxx, 203
- A new method of making ureteropyelograms N P
SEARS Surg Gynec & Obst 923, xxvi, 274 [474]
- Calculus of the kidney and ureter I S COVINA Prog
de la clin Madrid, 9 3, xxv 93
- Double kidney in suspected calculi in both pelvis
E L ELLISON Surg Clin N Am 9 3, iii 43
- Two cases of horseshoe kidney C MCKENNA Brit M
J 923, i, 36
- Transplantation of the kidney T P SAWYER Ohio State
M J 9 3, xxx 64
- Aches and pains of renal origin A FULLERTON Cana-
dian M J Am J 9 3, xii, 85 [474]

- The diagnosis of vascular renal disease N B FOSTER J
Iowa State M Soc 923, xii, 5
- Determination of kidney efficiency K M LYNN
Texas State J M 9 3, xviii, 501
- The use of creatinin as test of renal function R H
MAYOR J Am M Ass 9 3, lxxx, 354 [476]
- Renal glycosuria, with report of case C T STON
Texas State J M 9 3, xviii 58
- A case of renal glycosuria W ALLAN J Am M Ass
923, lxxx, 47
- Colloccocal infection of the kidney J D BARSTY J
Urol 923, ix, 79 [476]
- Some cytoscopic appearances in tuberculous of the
urinary tract W G BALL Brit J Surg 9 3, x, 226 [476]
- Healed renal tuberculous C C BIRKELLO J Radiol
9 3, 63
- Renal tuberculous cured by nephrectomy A N STU-
VETTIS and E B RANIERI Seneca med 9 3, xxx 30
- The treatment of pyelitis C H CHERRYHOD J Urol,
923, ix, 87 [476]
- Chloride retention in experimental hydronephrosis N
M KETTER and D S FULLERTON J J Exper Med 9 3,
xxxvii, 75
- Hydronephrosis E L ELLISON Surg Clin N Am
923, xi, 5
- Experimental hydronephrosis, the significance of com-
pensatory hypertrophy and disease trophy to repair P
LIVINA J Am M Ass 9 3, lxxx, 35 [476]

A case of bilateral malhermy of the testes L O
TAYLOR California State J M 9 3, xii, 55
Cystic lymphangiomas of the scrotum, surgical removal,
successful treatment by radiotherapy cure M OULDAID
J dental med et chir 923 xiv 33

Miscellaneous

A new cysto urethroscope for examining and operating
on any part of the urinary tract by direct telescope or
indirect periscope method G S GORDON Canadian M
Am J 9 3, xii,
Röntgenography of the urinary tract during the excre-
tion of sodium iodide E D O'BRIEN, C G STICKLAND
A J CHURCH and L D ROWNTREE J Am M Ass 9 3,
lxix, 368 [484]
Venereal disease as a casualty W BETT Proc
Roy Soc Med Lond 9 3, xvi, War Sect
The action of stronger solutions of mercurochrome in
study gonorrheal infections F RUTEL J Am M Ass
1913 lxix, 330

Not on the treatment of gonorrhea J W LA MAY
Therap Gaz 9 3 3, xxxix, 95
The standard of cure in the treatment of gonorrhea
W L HARRIS B t M J 923, 4, 357
The treatment of inflamed inguinal glands O ARLE-
WID Am J Clin Med 923, xvi, 7
A preliminary report regarding the germicidal char-
acter of the effusions from colloids of certain silver
salts E G BALLENGER and O F ELDER J Urol
9 3 ix 37
Orthostatic albuminuria W E POS and W A
THOMAS J Am M Ass 9 3 lxix, 393
Urinary diagnostic and therapeutic agent T W
DRACHMA J Am Inst Homoeop 9 3 xv 724
The mechanism of the formation of urinary calculi L
D KUTNER Ann Surg 9 3 lxixv [484]
Cystin calculi, complex surgical problem report of
case of multiple cystin calculi C E TERRY J Am
M Ass 9 3 lxix 393 [485]
The post-operative care of urinary cases A I CRUTE
South M J 9 3 xv 24

SURGERY OF THE EYE AND EAR

Eye

Palpating exophthalmos L B WHITMAN Am J
Ophth, 923, 4, 8 [486]
An experience with some cases of foreign body in the
eyeball W B SMALL J Iowa State M Soc 9 3 xii
44 [486]
The endonasal operation of the lacrimal sac W B
CHAMBERLIN J Indiana State M Ass 9 3 xv 42 [486]
Plastic operation for contracted sockets M W B
CURTIS Proc Roy Soc Med Lond 9 3 xvi Sect
Ophth 7
Foreign body removed from the orbit H V GATCHELL
Brit M J 9 3 83
Hemorrhages of the orbit L PATO Proc Roy Soc
Med Lond 9 3 xvi Sect Ophth 5
Final results of carcinoma of the orbit probably origina-
ting in the lacrimal gland C N HOWARD Am J
Ophth 9 3, vi, 8
The eye in aviation—some experiences in the work of
the Department of Ophthalmology Medical Research
Laboratory Third Aviation Instruction Center A E F
FRANK C BIRNBAUM, J M Surgcon 9 3 lx 35
A new theory regarding vision F SCHWARTZ Arch de
med exp 9 3, 130
Better eyes make better children W M CARRARY
Med Times, 9 3 4, 40
A statistical enquiry into 1000 cases of eye injuries A
GARDNER Brit J Ophth 923 vii 6
Results after orbital and ocular battle injuries R A
FERRON M d Surgeon, 9 3, lx, 93
Combat wound of the orbit, operation, recovery J A
MORGAN Am J Ophth 923, vi, 29
Industrial eye injuries F ALLPORT Illinois M J,
923, xlii, 145 [487]
A case of bilateral proptosis with limitation of the move-
ment of one eye R A GARDNER Proc Roy Soc Med
Lond 923, xvi, Sect Ophth 7
Heterophoria L W FOX Am J Ophth 9 3, vi,
Transfer of function of ocular muscles E JACKSON
Am J Ophth 923, vi, 7
A study on strabismus E LANDOL Am J Ophth,
923, vi, 93 [487]

Pre- traction of patients operated upon for strabismus
M M AMAR Sagpo med 9 3 lxv 97
Tenotomy of the inferior oblique J L MCCOOT Am
J Ophth 9 3
Considerations of ocular vergence G F ALEXANDER
Am J Ophth 9 3 vi
Ocular manifestations in hypophyseal epithelitis F P
CALVERT Am J Ophth 9 3, 95
The diagnosis of optic neuritis due to sinus disease
J N HOFFMAN N York M J & Med Rec 9 3, cxvii,
42
Trachoma J W WRIGHT Ohio State M J 923, xlii,
The care of trachomatous of the cornea S R GIFFORD
Med Herald, 923 xlii 58
Reticular keratitis report of case F S OSBORNE
J Am M Ass 9 3 lxix, 515
A preliminary report on observations on localized im-
balances S P SCHWARTZ N York M J & Med Rec 923,
cxvii
The diagnosis and treatment of tritis F TINKER
Gac med Peruan 9 3 4
Cases of metastatic carcinoma of the choroid and iris
C H VONDER Bnt J Ophth 923, vi,
Case of ectopic lens (both eyes) M L HIRV Proc
Roy Soc Med Lond 923, xvi, Sect Ophth 14
The treatment of early cataracts in the scutic form, with
demonstration of six cases W B I POLLOCK Glasgow
M J 9 3 xvii 3
A consideration of cataract procedures W F HARDY
Am J Ophth 92 v 96
One hundred consecutive cataract operations F A
LAWSON Am J Ophth, 9 3 vi, 26
Cataract extraction followed by symptoms suggestive
of sympathetic ophthalmitis F FEROLS Bnt M J
9 3, 8
Vision after cataract extraction F NICHOLAS Am J
Ophth 923, vi, 3
Acute delirium following cataract operation, case report
A O PRINCE Kentucky M J 923, xii, 98
Recurrent hemorrhage into the vitreous M J JOYNT
J Iowa State M Soc 923, xii, 45
Intra-ocular malignant tumors in young children C J
ADAMS Am J Ophth 92 967

X-ray treatment of tonsillar and lymphoid tissue J H TUNNICLIFFE *Ann. Otol. Rhinol. & Laryngol.* 1933 xxxii, 1944. [491]

A study of the tonsil question, with preliminary report of roentgen ray and radium therapy in the treatment of pathologic tonsils L A LARK *Minnesota Med.* 93, vi, 97.

Observation on the results of roentgen therapy in chronic tonsillitis J W BARCOCK *J. Am. M. Ass.* 923, 1933, 300. [492]

Tonsillectomy and its complications C F KURR *Am. J. Surg.* 923, xxxvi, 492.

The technique of the Slader method for the removal of the tonsils W FOWLER *Grace Hosp. Bull. Detroit.* 1933, vi.

Excision of tonsillar remnants after incomplete tonsillectomy J A GRAMENARO *N. York M. J. & Med. Rec.* 923, cxvii, 23.

Cysts of the human pharynx F A FROU *Laryngoscope*, 1933, xxxiii, 27. [493]

A case of shrapnel wound of the larynx J ATKINSON *Proc. Roy. Soc. Med. Lond.* 923, xvi, Sect. Laryngol. 15.

War surgery of the larynx, with special reference to the neck at Cape May G BERRY *Laryngoscope*, 923, xxxiii, 25. [494]

Two cases of pulmonary tuberculosis with laryngeal symptoms P FRANKLIN *Proc. Roy. Soc. Med. Lond.* 1933, xvi, Sect. Laryngol. 5.

A case of chronic laryngitis of long standing C A S RIMOURT *Proc. Roy. Soc. Med. Lond.* 923, xvi, Sect. Laryngol. 23.

A case of dryotonic atrophy with implication of the left crico-arytenoid muscle H TILLEY *Proc. Roy. Soc. Med. Lond.* 923, xvi, Sect. Laryngol. 8.

Two cases of laryngeal stenosis treated by translaryngeal fixation of a tube E SCHNEIDERLOW *Hosp. Tid.* 92, lrv, 23.

A case of pachydermia laryngis H SMITH *Laryngoscope*, 923, xxxiii.

The removal of laryngeal papillomata with simple technique R MCKINNEY *Laryngoscope*, 923, xxxiii.

Subcutaneous vulsion with oblique tomion of the larynx after burial A JURASK *Ztschr. f. Laryngol. Rhinol.*, etc. 923, xi, 7. [495]

Mouth

The technique of oral radiography C O SKORSON *Internat. J. Orthodont. Oral Surg. & Radiography* 923, ix, 244.

Malposed teeth their classification, pathology and treatment T BLUM *Internat. J. Orthodont. Oral Surg. & Radiography* 923, ix.

Orthodontics the bearing of etiology on treatment H CHAPMAN *Internat. J. Orthodont. Oral Surg. & Radiography* 923, ix, 93.

Non vital teeth and their relation to focal infection T C BUCKLEY *J. Lancet*, 923, xliii, 59.

Can the medical and dental professions agree on any standardized treatment of the focus of infection? B C DARLING *J. Radiol.* 923, iv, 30. [496]

Submandibular salivary calculus B F BERRY *Ann. Surg.* 923, lxxvi, 776.

Thyroid tumor from the base of the tongue H D T WINK *Proc. Roy. Soc. Med. Lond.* 923, xvi, Sect. Laryngol.

Cyst of the uvula T J F ULLER *Proc. Roy. Soc. Med. Lond.* 923, xvi, Sect. Laryngol. 5.

INDEX TO SUBJECT MATTER

- ABDOMEN** Postoperative adhesions in, 73 anatomy and normal bending of nerves in all of 70 relation of calcified glands of to urinary surgery 263, cathar-
tic after operations on, 79, hemorrhage following operations on, 316 and method of draining abscesses of, 330, gate to maintain permanent opening in 409 penetrating wounds of, 433 diagnosis of obscure chronic conditions of 434, segmental localization of pain through paravertebral cocaine injections as dif-
ferential diagnostic method in diseases of 435 max-
illary tumors of, 435
- Abortion** Hemolytic streptococemia following 50 bac-
teriology of fatal systemic infections following 350
- Abcess** Etiology of retropharyngeal, 5 subpharyngeal, 9
puncture of prevertebral, 244 descending from upper
extremities, 304 safe method of draining intra-
abdominal 330 papillomatous of cavity of, 3 See
also names of organs and parts
- Accident case** Responsibility for payment of physician in,
46
- Acetabulum** Classification of, 26
- Adipitis gastrica** Roentgenological aspects of 35
- Adenomyoma** from surgical standpoint, 95
- Adhesions** Postoperative in abdominal cavity 73 typical
operations in cases of severe, due to appendicitis 230
- Adrenal** Extirpation of in epilepsy 215
- Adrenals** Intracardiac injections of, for resuscitation 303
- Adrenals** Acute insufficiency of, and death as sequel of
treatment with higholtage roentgen rays, 360 has
largest tumors of, 374
- Agar** Crystals in, in medicine 215
- Agar** Transformation of blood in posthemorrhagic 454
- Agar** Alterations in blood after ether 8 new pro-
cedure of Gause and Wiedard for 74 cause of dark
color of blood following too deep, 74 new technique
for general spinal, 6 experiences in local and con-
duction, 6 conduction, in leg, 6 experiences in
nerve, in urology, 163 dangers of lumbar 63 trans-
sacral nerve block, in surgery of pelvic floor and its
nerve, 7 for prostatictomy 383 hypertonic gl-
ucose solutions as prophylactic against injurious effects
of, 407 behavior of blood pressure and pulse during
and after novocaine anesthesia 408 classical cocaine
section under 473
- Agar** Conservative treatment of false, 307 etiopath-
ogenesis, pathologic anatomy physiopathology and
surgical treatment of true 85 See also under Artery
and Vein
- Agar** Factors, Cervical sympathetomy to stop pain of
32
- Akyloma** Operative measures to mobilize, 98
- Astron** of Highmore, Blahup in puncture and irrigation
of, 388, 400 carcinoma of 389
- Astma** Calculous, 267
- Astma** New method for surgical treatment of congenital
respiral, 44, imperforate, 23
- Aorta** Site of puncture wound of ascending 80
- Appendectomy** Hemorrhage following 3 6 inguinal her-
nia on right side following 3 7 abscess opening in
bladder by subperitoneal route after, 3 7
- Appendicitis** Safe subtotal extirpation of tip of appendix
in cases of severe adhesions due to, 30 cases of cystic,
3 6 intestinal obstruction following acute, 3 6
- Appendix** Cancer in cervical stump with metastases in
16 safe subtotal extirpation of tip of in cases of
severe adhesions due to appendicitis 30
- Aras** Unusual foreign body in injuries of nerves of,
350 arteriovenous aneurysm of subclavian artery with
reversal of circulation of 45
- Arteries** Transplantation of by Nagro's method 218
destruction of 240
- Arteriotomy** for embolism of viliary artery 97
- Artery** Significance of aneurysms of tennis vessels
indicated by aneurysm of uterine and cun due to
aerial bomb injury 4 arteriotomy for embolism of
axillary trauma in rupture of femoral with
hematoma 247 fibrosis of lung following ligation of
pulmonary combined with phrenotomy and partial
occlusion of pulmonary veins 304 fistula of femoral
and an on level with origin of profunda 35 ligation
of splenic 433 wounds of common carotid 454 aneu-
rysm of subclavian and vein with reversal of circula-
tion of arm, 455 See also Arteriosclerosis
- Ascendens** Importance of in surgical practice, 7
- Ascens** Lumbagoes in biliary tract 33 partial obstruc-
tion of pancreatic duct by 326 mechanical myoma
in stomach in intestinal obstruction due to, 458
- Avila** Topography of nerves of brachial plexus and vessels
of, entrance into subclavicular space, 358
- BACK** Acute painful, among industrial employees alleg-
ing compensable injury 35
- Bacteria** Reverse selective action of acid fuchsin on, 356
- Bile** Injury to cornea and conjunctiva due to fish, 30 in
pancreatitis, 324
- Bile** duct, Repair of principal or its implectation in
gastrointestinal tract in difficult cases, 21 obstruc-
tion of common and ansura due to solitary cyst of
kidney 26 repair by end-to-end suture of injury
to ansura in cholecystectomy 320 congenital cyst of
common, 3 3 method for permanent steric drainage
of common, 324 choledochal cyst of common 43
importance of indirect roentgen findings in chronic
infection of, and gall bladder 433
- Bile** ducts, Congenital obliteration of and congenital bil-
iary cirrhosis of liver 3 primary closure of
abdominal wall in operations on, with special con-
sideration of simultaneous operations on stomach and
duodenum 3 3
- Biliary** tract, Technique of exposing 75 ascens lumb-
ricoides in 33
- Bladder** Pre-operative treatment of malignant tumors of
by radium, 49 new procedure for formation of
splint for 49 end results of operations for cancer
of, 50 techniques and statistics of treatment of car-
cinoma of by radium, 3 pathology and treatment
of fibromyositis of urinary 21 operative treatment
of incontinence of urinary 95 improved method of
supporting, and vagina after vaginal hysterectomy for
prolapsed, 50 pyeloplasty opening into urinary
cured by operation, 215 fistula involving uterus
vagina and, 33 chieve ulcer of 264 pathology of
neck of, 264 residual appendicular abscesses opening
into, by subperitoneal route after removal of appen-
dix, 3 7 epithelioma of of allostoid organ, 360
surgical removal of obstructions of neck of, with refer

- cure to Young punch, 350 associated closed true aneurysm of posterior vertebra and, 350 regeneration of resected urinary in rabbits, 351 findings in, in tuberculous of urinary tract, 470 treatment of cataplexy of, 480 stone removed from, by lithotomy, 48 treatment of epithelial tumors of urinary, 48 falsification in treatment of affections of, 48 cyma calcis in, 485 See also under Urinary Tract
- Blood, Alterations in, after transfusion of, 8, cause of dark color of, in too deep incision, 74 simple procedure for testing circulation of, in ganglion of extremities, 307 changes in, occurring in course of single day of ear cure, 347 action of ether on circulation of, in true aneurysm shock, 389, changes in physico-chemical structure of plasma of, with accelerated sedimentation of cells of, following treatment with irritants, surgical operations and diseases, 352, sources of error in group tests of, and criteria of reliability in investigations on heredity of groups of, 36 sugar in, during pregnancy and puerperium, 366 sugar test of, in pregnancy, 366 diabetes in, and same as measure of renal efficiency, 374 existence of more than four isoglycemia groups in humans, 453 influence of concentration on coagulation of, 453 transfusion of, in acute posthemorrhagic anemia, 454 intraperitoneal transfusion with citrated, 454, effect of serum secretion on coagulation of, 462
- Blood pressure, Behavior of, and pulse during and after novocaine adrenalin anesthesia, 408 theoretical bases and practical application of estimations of, in surgical operations, 433
- Blood vessels, Functional transformation of, 455 treatment of defects of walls of, by application of rubber protective coverings, 455
- Bone, Tumors of, 5, 334, 436 perosteal sarcoma in association with osteomyelitis, 93 transplantation of, 90, malignant tumor of temporal, 63 diagnosis and treatment of lesions of, 330, traumatic new formation of, 33 myxoma ossificans and perosteal cysts of, 33 cysts of, 33 disease of, from fixation and non use, 31 metastasis to lungs from pure myxoma of, 335 grafting of, 34 certain factors causing deposition of bone salts in, 436 plugging of cavities in, with free tissue plants of fat, 444 cystic carcinoma of, as compared with sarcoma form, 453 parathyroid hyperplasia and destruction of, in generalized carcinomatosis, 45 See also under Bones and bone diseases
- Bones, Roentgen diagnosis of more important tumors of, long, 34 primary multiple sarcomata of, 93, operation for lengthening, 90 temporary plating of fractures of, long, 336
- Branchial clefts, Topography of nerves of and auxiliary vessels at entrance into subclavicular space, 358
- Brachyelectrolysis due to congenital shortening of meta carpal, 336
- Brain, Operation for total extirpation of tumors in cerebral hemisphere, angle of, X ray diagnosis of diseases of, following spinal anesthesias, 38, effect of radiation on normal tissues of, of dogs and its therapeutic application, 30 surgical operations on gunshot wounds of skull and, during war, 741 abscess of, of unusual etiology, 76 histogenesis of hypophyseal type and Argyll Robertson sign associated with tumor of thalamic ventricle of, 76 injuries of visual tracts of, 75 abscess of, 164 unusual paucity of symptoms in some cases of tumors of posterior cleft angle of, 164 ocular sarcoma involving, and spinal cord, 300 hemiplegic and heteroplastic tumor grafts in, 178 fatal congestive hemorrhages in long and, due to momentary bodily exertion, 21 inflammation of in rabbits due to herpes, 390 parasitology and pathological anatomy of cysticercosis of, 40, regeneration of neocortex of, 410 hemorrhages of, in apparently healthy adolescents and children, 410, increased pressure on, with fat embolism, 41
- Breast, End results of operations for cancer of, 347 tuberculous of, 3 tumors of, 80, 100, influence of plicatura on, 55 bleeding of, 66 effect of radiation with regard to postoperative recurrence of carcinoma of, 67 treatment of recurrent inoperable carcinoma of, by radium and roentgen ray, 67 fibroadenoma of, in male, pregnancy after operation for cancer of, 57, freedom from local recurrence following chemical removal of advanced carcinomas, 300 result and technique in treatment of carcinoma of, by radiation, 30 tumors of arising during pregnancy and lactation, 368, axilla vascular extension of operative for malignant disease of, 417 local recurrence following extirpation of carcinoma of, 418, clinical cure of recurrence of carcinoma of, lasting more than five years after treatment with roentgen ray, 418
- Breath extraction, Injury of spinal cord in, as cause of fetal death and paraplegia in childhood, 37
- Bronchiectases, Location of pulmonary lip fistula in conservative treatment of advanced lung abscess in, 11 307 graded thoracoplasty in diffuse, 168
- Burns, Pterygiae, Cysts of, 49
- CACITIXIA, Picture of hypophyseal, 30
- Carcinoma section, Uterus after, 30, test of labor in relation to, 58 indications for, and technique of, 30 for delivery of pregnant right side of double uterus, 370, once a, always a, an embryo, 371, chemical under local anesthesia with temporary fixation of uterus, 473
- Carcinoma, Breaking off of, tuberosity of, 390
- Cancer, End results in, as influenced by type, reaction, location, and age, 33 diagnosis of, by means of serum reactions, 66 elective fixation of radium-colloidal substances on embryonic and neoplastic cells and its importance in diagnosis and treatment of, 371 function of connective tissue in experimental production of cancer, 437 See also Carcinoma, Malignancy and names of organs and parts
- Carcinoma, Cystic osteoplastic, as compared with sarcoma form, 45 parathyroid hyperplasia and bone destruction in generalized, 45 roentgen, 430 See also Cancer, Malignancy and names of organs and parts
- Carcinomatosis, Parathyroid hyperplasia and bone destruction in generalized, 45 See also Cancer, Carcinoma, and Malignancy
- Castration of male by X ray, 383
- Cattract, Desaturation to least protein before operation for, 55 new method of recovering less in operation for, 304 extraction of, with adrenergic, 370, factor influencing choice of method for extraction of, 385
- Catheterism after abdominal operations, 389
- Catheterism, Stiches on urethral, 40
- Cephalocle, Occipital, 70, unusual, 30
- Cerebellopontine angle, Total extirpation of tumors in, 9 unusual paucity of symptoms in some cases of tumors of, 164
- Cerebellum, Hemorrhages of, in apparently healthy adolescents and children, 410 See also under Brain
- Cerrbrion, Hemorrhages of, in apparently healthy adolescents and children, 410 See also under Brain
- Cervical ribs, 344
- Cheek, Flaps on, with tubed, temporal pedicled forehead flaps, 393 rotation of, 4, principles involved in operations for carcinoma of, and results obtained, 4, 4, 4

- Clot, Termination of night, 300 gate to maintain perma-
nent opening in, 400
- Clinic, Hanks on, with tubed, temporal pedicled forehead
flaps, 293
- Closed disk, Decompression for, 64
- Clostridium, cholelithiasis, cholecystitis, and, 330
- Cholecystectomy And associated pathology of gall bladder
disease 24 operative injury to main bile duct in
330
- Cholecystenterostomy from experimental standpoint 90
- Cholesteroma, Cystic, 74 chronic catarrhal, with lipoid
deposit 33, cholelithiasis, cholangitis and 330
- Cholelithiasis, Admissibility of early operation in, 5 diag-
nosis and treatment of, 175 cholecystitis, cholangitis
and, 330 operative injury to main bile duct in cho-
lecystectomy for 330
- Cholelithotomy, Ideal, 3
- Chorio-epithelio-epithelioma Transplantable meta-
stasizing, of rat, 35
- Chorionepithelioma Malignant with hemorrhage into
abdominal cavity 45 frequency and treatment of
464
- Chorionostocopsis Accurate 267
- Circulation Sample procedure for testing in gangrene of
extremities, 97 action of ether on in traumatic
shock, 270 arterial occlusion occlusion of subclavian ar-
tery with removal of, of rat, 455
- Clinic Retrosternal dislocation of 9
- Cleft palate, types and operative treatment of harelip
and 77 harelip and 9 typical plastic operations
for 20
- Cocaine Perforation of nasal septum in snufflers of 450
- Celitis Chronic ulcerative and its treatment 470
- Colon, Proximal portion of from clinical surgical
standpoint, extirpation of transverse, the ca-
ecocolonostomy treatment of acute obstruc-
tion by cancer of 73 treatment of non malignant
affections of 73 7 pre-operative and post-
operative treatment of malignancy of 90 patho-
genic process of right, 4 8 indications for anchoring
head of, and results 470 See also Gastro Intestinal
Tract and I. testine
- Calot's Value of temporary
- Congestion Fetal hemorrhages in lung and central
nervous system due to momentary bodily exertion and
their relationship to Perthes pressure
- Conjunctiva, Injury to cornea and attributed to fish bile
but due to lead acetate 30 periphthiasis of 385
- Cornea Early development of ulcer of 36 injury to
and conjunctiva. Attributed to fish bile but due to lead
acetate, 30
- Corpus bicornu Influence of on ovaries and termi-
cycle, 5
- Corn, plaque and tuberculous osteitis of neck of femur 490
- Corticoids Use of as test of renal function, 476
- Cranial ligaments, Injury to and spinal spine 24
- Cranial operations in gastro intestinal surgery 6
- Cryptorchidism, Operation for 5 congenital defect of
anterior abdominal wall and, 266 clinical aspect and
treatment of, 266
- Cystic calculi, Case of renal cyst 485
- Cystocoele, Treatment of 364
- Cysts, Form of pelvic by distal and treatment, 44 retro-
peritoneal, 435 See also names of organs and parts
- D**ACRYOCYSTITIS suppurative ethmoiditis compli-
cated by orbital cellulitis and acute suppurative 38
- Deformities Correction of of long standing, 342
- Deflated muscle, Method of facilitating plastic operations
on, 445
- Diabetes I jury as cause of, impudus with bitemporal
hemianopsia 260, clinical experience with insulin in
treatment of mellitus, 356
- Diaphragm Above below 9 immobility of 306
phrenic nerve and innervation of 355 cause and
effects of immobility of 4 pneumoperitoneum
and its diagnosis of conditions beneath 435
- Dialtherapy Treatment by 3 7
- Disease Remark on etiology of Schliesser 37 Albert
Schonberg 333 pathology of Paget 333 place of
operation for spinal fixation in treatment of Pott
348 operation as part of conservative treatment of
Pott 340 osteomyelitis in Pott 349 changes in
physicochemical structure of blood plasma with ac-
celerated sedimentation of blood cells following 3
- Duodenum Unilateral 374
- In ericulum Acute intestinal obstruction caused by
fecal impaction in Meckel 3 5
- Duodenal ulcer 4
- Drainage Safe method of for abdominal abscesses 350
- Duodenal Ulcer of stomach and 84 ulcer of stomach
and cancer 81 histology and healing of ulcer of
stomach and 84 peptic ulcer in 34 surgery of
membranes of obstruction of in infants 36
pathologic relationship between ulcerative processes
in stomach and and epigastric hernia 3 surgery of
ulcers of stomach which have perforated into
abdominal cavity 3 treatment of simple perfor-
ation of ulcers of stomach and, 3 diagnosis of
chronic ulcer of stomach and 3 5 chronic obstruc-
tion of 3 4 primary closure of abdominal wall in
operations on biliary ducts with spontaneous op-
eration on stomach and 3 3 problems of ulcers of
stomach and 423 See also Gastro Intestinal Tract
and Intestine
- Dystopia Reported from fetal anomaly in succession post-
nances 37
- E**AR Correction of protrusion 27 unprovoked artificial
drain for 386 septic type of temperature not refer-
able to acute suppurative otitis media 387 oper-
ation correction of defects of, by epithelial inlay 488
acute disease of, in children, 488
- Ectropion Results of treatment of, by Dublin method
9, true and renal 469 new treatment of, 470
- Elbow Trans-olecranon route for reduction of old dis-
locations of 76 arthroplasty of 24 sprains of 437
- Electrocoagulation in cancer of lip,
- Embolism Air, following various diagnostic or therapeutic
procedures in diseases of pleura and lung 14 pul-
monary fat 68 increased cerebral pressure with fat
4
- Empyema 45 infection in mediastinum in fulminating
recent progress in treatment of chronic 290
unusual case of 290 chronic 4 6
- Endocarditis, Treatment of chronic 465
- Epididymectomy by Stammach method as means of re-
juvenation in old age and other conditions 38
- Epididymis Cysts of, 68
- Epilepsy Extirpation of adrenal in, 245
- Ergot Action of and solution of hypophysis on termi-
80
- Ether Action of on circulation in traumatic shock, 80
bactericidal and inhibitory power of, on peritonsils 4
- Ethmoid, Total blindness cured by operation on, and open-
ing of ethmoid sinuses, 27 carcinoma of 400
- Ethmoiditis Suppurative, complicated by orbital cellulitis
and acute suppurative dacryocystitis 28
- Ferric, Changes in blood occurring in single day of 247
- Esophthalmos, Probating, 484

- Ey.** Unusual tumor of orbit of 54, localization and extraction of foreign bodies in 54, cysticercus of 50, suppurative ethmoiditis complicated by cellulitis of orbit of, and acute suppurative dacryocystitis 5 growths of orbit of, 99 relation of affection of due to nasal conditions, 99, mucous of involving bone and spinal cord, 200, therapeutic use of nasal pigment in sympathetic inflammations of, 200 focal infection in bone causing tuberculosis of, 200 sporadicities of, 200 diagnostic and therapeutic use of nasal pigment in injuries of nasal tract and sympathetic inflammation of 206 total blindness cured by ethmoidal operation and opening of sphenoid sinus, 71 metastatic thyroid tumor in orbit of, 185 etiology of sympathetic inflammation of 185 foreign body in 436 iodine trial injuries of 487 method of recording alterations of disk of, and study of growth of normal and abnormal disk cups, 487 *See also* names of parts and diseases
- FACE.** Plastic surgery of def. ynd pedicle flap in plastic surgery of 65
- Fallopian tube.** Results of surgical treatment of long-standing tumors of 43 suppurative in, opening into urinary bladder 5
- Femur.** Deformity of head of, obstacle to complete cure of congenital dislocation of hip 29 necrosis of proximal fragment in fracture of neck of, and its importance with regard to hip joint, 76 operative treatment of subcapital fractures of neck of 76 hip fracture of great trochanter 36 immediate operation for fracture of neck of, 39, fracture of, 34 carcinoma and tuberculous osteitis of neck of, 430
- Fetus.** Repeated dystocia in successive pregnancies due to anomaly of, 371 cranial stress in, during labor 371 injury of spinal cord in breech extraction as important cause of death of, and paraplegia in childhood 372, some obstetrical problems involved in stillbirth and death of, 37 association of fetal malformations and deformities with placenta previa 472
- Fibula.** Hereditary symmetrical osteitis of 44
- Flap.** Moretta plastic for contractures of, 446
- Flatfoot.** Relation of acute arthritis to, 377
- Foot.** Sebasteugoid dislocation of 420, report of commission appointed by American Orthopedic Association for study of stabilizing operations on 346 spurs of, 437 operations for deformities of 446
- Furuncle ovalis.** Patient, 9
- Fractures.** Results of operative treatment of comminuted, due to war injuries, 95 peripheral nerve injuries associated with, 3, alleged malpractice in treatment of 24 treatment of ununited, 37 osteomyelitis with eleven, 33 routine treatment of, by operative methods 333 temporary plating of, of long bones 334, treatment of ununited, by bridge grafts, 330 treatment of ununited, 330 *See also* names of bones
- Frostbite.** Treatment of with acetanilid ray 36
- Fuchsin.** Reverse selective bacteriostatic action of acid 336
- GALL-BLADDER.** Associated pathology of disease of 24, bacteriology of, 26 serological study of pathology, 200 consecutive tissue changes in, 223, lesions of, 23 studies in pathology of 319 surgical considerations of 22 disease of 457 relation of disease of, to secretory function of stomach and pancreas, 431 importance of indirect serologic findings in chronic infection of biliary ducts and 43 surgical treatment of disease of 431 *See also* names of gall bladder diseases and operations
- Gall stones.** Etiology of 322
- Gastric.** Simple procedure for testing circulation in of extremities 97
- Gastric anastomosis.** Preservation of motor root of in division of sensory root for trifacial neurectomy.
- Gastro-enterostomy.** Effect of on gastric function as interpreted by fractional test meal, 425, roentgenological investigations on functional behavior of stomach in various types of posterior gastrostomy, and comparison of its value in ulcer of stomach and duodenum, 426
- Gravid intestinal tract.** Craniolig operations in surgery of, 8, intraperitoneal ligation of bared capillary plantules of rindium emulsion or tumor of, 249 *See also* names of parts of gastro-intestinal tract, diseases, and operations
- Gastroptosis.** Surgical treatment of 413
- Gate.** Thoracic abdominal, 409
- Gonorrhea.** Tuberculosis, treated with radium, 272
- Glands.** Chronic suppurative of parotid, no relation of calcified abdominal, to urinary surgery 205, tuber culosis of salivary 272 tuberculosis of of neck and spinal accessory paralysis, 205 *See also* names of glands
- Glassoma.** Etiology and treatment, 27 snuff and halo of, 336
- Glossitis.** Hypertrophic, as prophylactic against injurious effects of operation and anesthesia 407
- Glossitis nodosa.** Transplantation of tumor flaps lesions in cases of, calcified, 343
- Gortz.** Despreux's test, 70, clinical experience in operation for with consideration of recurrent and operations for recurrence 165 recurrence of 66 treatment 170, histologic study of effect of ligation of thyroid vessels in exophthalmos, 206 Gortz's test and radiotherapy in, 207, hypothyroidism in exophthalmos 44, method and technique of operation for 45
- Gruft amputation in insurance medicine 413**
- H E M A T U R I A** Uteral structure as etiological factor in so-called essential, 91
- Hemorrhage.** Diagnosis and treatment of intracranial in newborn, 20, following abdominal operations, 316 in newly born, 372, transfusion of blood in acute anemia due to, 454
- Hand.** Rigidity of, 490 partial endoneural resection in spastic contractures of in infantile hemiplegia 445
- Harelip.** operative treatment of complete double, 77 types and operative treatment of, and cleft palate, 77 and cleft palate 9 typical operations for 29
- Heart.** Surgery of 3 307 pulling rupture of, and its mechanism, 5, by distal cysts of, 10 injections of adrenalin into for resuscitation 205
- Hemastoma.** Injury as cause of diabetes insipidus with bilateral 269
- Hepatic duct.** Efficiency of Kahr drainage of, 32
- Hepatoduodenostomy for stricture of bile duct, 320**
- Hernia.** Non traumatic diaphragmatic, 8 medical operation for femoral, with and of active muscular closure 70 relation of epigastric, to gastric ulcer 208 radical operation for inguinal and femoral, with plastic use of uterus through abdominal cavity and small incision laparotomy for another closure, 71, operative treatment of difficult, 71 gastrostomy performed of stomach complicating diaphragmatic 7 anatomy and identity of encysted and anastomotic, 25 lev. tor operated upon by combined route 54, operative treatment of umbilical, 309 pathological relationship between ulcerative processes in stomach and duodenum and epigastric, 3 inguinal, on right side following appendectomy 37

Benzothylene tetramine, Action of, 374
Hip, Traumatic dislocation of, in child, 8 surgical treatment of habitual dislocation of 59 deformity of head of femur as obstacle to complete cure of congenital dislocation of, 59 Davis method of reducing congenital dislocation of, 66 necrosis of proximal fragment in fracture of neck of femur and its importance with regard to, 176 Calvé-Legg Perthes disease of, 36 congenital subluxation of, 38 uncompleted epiphyseal fractures at, 39 treatment of congenital dislocation of, 34 limited fracture of acetabulum in luxation of, 34 end result in severe destructive injury to 344 Lorenz infarction operation for dislocation of 443 new method of treating irreducible acquired or congenital dislocation of, 443 treatment of old congenital dislocation of, 443
Humerus, Fracture separation of, in epiphysis of 8 operative treatment of supracondylar fractures of 37 solitary cyst in, 335 fracture dislocations of head of, 340 operative treatment of supracondylar fracture of, in children 435
Hydatid mole, Frequency and treatment of, 464
Hydrocephalus, Ventriculography and intra ventricular photoplasm in internal 4
Hydrophthirus, Histologic lesions of experimental aseptic, 21 treatment of, caused by abnormal renal vessels, 378 experimental and significance of compensatory hypertrophy and dense atrophy to repair 476
Hypertonia, Intermittent asphyxia in gynecology 44
Hypochlorhydria, Mechanism of 309
Hypophyseal, in epiphyseal joint 4 4
Hypophysis, Infarction due to insufficiency of associated with tumor of thalamic part of third ventricle 76 action of ergot and solution of, on terms, 89 extract of in reduction of labor 37 picture of carcinoma due to insufficiency of 29
Hysterectomy, Improved method of supporting bladder and vagina after vaginal, to proctitis, 50
Hysteromyometomy, Evolution of 6
LEDS during pregnancy 9 as sequelae of ventrofixation of uterus, 463
Ischiatic palsy, Surgery in, 24 correction of deformities of long standing due to, 343
Infarction of hypophyseal type and Argyll Robertson sign associated with tumor of thalamic part of third ventricle, 76
Infection, Foci of in intestines, 88 significance of lymphatic involvement in, 354 agreement of medical and dental professions on standardized treatment of focus of, 493 See also names of organs and parts
Laryngitis, and, 6 acute painful back among industrial employees alleging compensable 83
Lek point, Tissue necrosis due to 459
Lenses, Clinical experience with, in treatment of diabetes mellitus, 356
Lithotomy, Foreign bodies in, rare diagnostic error 30 preventing wound of perineum with puncture of, 30 primary sarcoma of 30 aseptic method for aseptic means of, 377 aseptic technique for resection of 3 perineal obstruction of small, 3 4 end to end anastomosis of, 3 7 See also names of parts of intestine diseases, and operations
Lithotomy, Tetanus bacillus as saprophyte in 33 importance and reduction of demarcation of endometrial type to an anastomosis of endometrial type 43 acute obstruction of, in infancy and childhood, 87 foci of infection in, 88 acute obstruction of 83 treatment of acute obstruction of, due to cancer of colon, 77 acute obstruction of caused by fecal impaction in

Mackel diverticulum, 3 5 obstruction of following acute appendicitis and peritonitis, 3 6 etiology of acute intonation from, in infants, 4 8 injuries to mucosa of caused by ascariasis 438
Intonation, Acute intestinal, in infants, 478
Iodine, Surgical importance of adenosyncrasy to, and poisoning due to, 407
Ionization measurements, 360
JAWS, Treatment of cancer of reconstruction of arch of lower by autophagy 76 atypical operations on, and mouth for malignant growths, 3 general principles involved in operations for carcinoma of result obtained 1 Cleveland Clinic, 4 4
Jejunum, Formation of peptic ulcer in, 9 See also under Intestine
Joints, Pathology of tuberculosis of, 93 operative measures to mobilize ankyloses, 98 chronic diseases of other than mycotic and neuropathic conditions, 35 facts and theories explaining spontaneous origin of, 36 sprains of large of extremities, 436 See also names of joints, diseases, and operations
K
KELOID, Radium treatment of 36
Keratitis, Influence of trauma upon onset of interstitial 55 neuropathic caused by focal infection, 7
Kidney, New method for roentgenological exploration of, 36 pathological complications with duplication of pelvis of and ureter 47 studies on ureteral catheterization of 49 malignant papilloma of (traumatic subcutaneous rupture of) 9 surgery of bonehose, 9 cysts 93 diagnosis of small concretions in pelvis of, and ureter 94 carcinoma in ureteroligamenturectomy of metastatic from prostate, 95 nature and significance of masses of 360 double and double ureter 360 recurrent calculi in, 36 obstruction of common bile duct and anoma due to solitary cyst of 36 partially transperitoneal and partially extraperitoneal operation on 36 anoma due to calculi in, 367 diabetes in blood and urine as measure of efficiency of 374, diabetes of one, 374 transfusion of oxygen around 375 tumors of, 375, calculi of, 376 code of associated with urethral conditions in women, 376 diagnosis and surgical treatment of accessory 376 tumors of, 378 clinical picture of chronic inflammatory diseases of coverings of, 378 true ectropism and ectropism of, 469 aches and pains originating in, 474 use of creatinin as test of function of, 476 gonococcal infection of 476 lithic unrecognized mode of origin of congenital cysts of, 477 polycystic, 477 echinococcus disease of 477 leucoplakia of pelvis of 477, diagnosis and treatment of malignant tumors of 478, conservative surgery of associated with urethral structure of, 479 See also Urinary Tract and names of kidney diseases and operations
Knee, I injuries to crucial ligaments of and vision of tibial space, 440 new approach to semilunar cartilages of 443 wounds of, 443 chronic non-inflammatory lesions of 336 efficient treatment of acute and chronic, simple traumatic synovitis of, by repeated aspiration and immediate active mobilization without splinting, 343 lesions of and their operative treatment, 344 sprains of 437 anastomosis of capsule of 439 so-called osteochondritis dissecans of, 440, pathology and diagnosis of injuries of meniscus of, 441 peri articular fixation of 446
LABOR, Immediate repair of lacerations due to versus delayed 9 retroversion of uterus following, 30 action of ergot and solution of hypophysis on uterus in,

Lye Unusual tumor of orbit of, 54. Inoculation and extraction of foreign bodies in, 54. Cysticercosis of, 20. Suppurative ethmoiditis complicated by cellulitis of orbit of and acute suppurative dacryocystitis, 22. Growths of orbit of, 99. Relation of affections of due to sexual conditions, 99. Absorption of an living brain and spinal cord, 2007. Therapeutic use of areal pigment in sympathetic inflammation of, 200. Local infection in too all causing tuberculosis of, 200. Spontaneous of, 200. Diagnostic and therapeutic use of areal pigment in injuries of areal tract and sympathetic inflammation of, 206; total blindness cured by skinned operation and opening of sphenoid sinus, 771. Metastatic thy nod tumor in orbit of, 335. Etiology of sympathetic inflammation of, 335. Foreign body in, 450. Industrial injuries of, 437. Method of recording alterations of disk of, and study of growth of normal and abnormal ch-l cups, 437. See also names of parts and diseases.

FACE, Plastic surgery of. See pedicle flap in plastic surgery of, 65.

Fallopian tube, Results of surgical treatment of long-standing tumors of, 41. Suppuration in, opening into urinary bladder, 5.

Femur Deformity of head of, as obstacle to complete cure of congenital dislocation of hip, 29. Perforation of proximal fragment in fracture of neck of and its importance with regard to hip joint, 70. Operative treatment of subcapital fractures of neck of, 70. Late results of great trochanter, 30. Immediate operation for fracture of neck of, 30. Fracture of, 34. Complications and tuberculous osteitis of neck of, 430.

Fetus, Repeated dystocia in successive pregnancies due to anomaly of, 37. Cranial stress in, during labor, 37. Injury of spinal cord in breech extraction in important cause of death of and paraplegia in childhood, 37. Some obstetrical problems involved in stillbirth and death of, 373. Association of fetal macerations and deliveries with placenta previa, 473.

Fibula, Hereditary symmetrical osteitis of, 44.

Fingers, Mordant plastic for contractures of, 416.

Phthoet, Relation of acute neuritis to, 337.

Foot Subtarsal dislocation of, 240. Report of complications reported by American Orthopedic Association for study of stabilizing operations on, 340. Sprains of, 437. Operations for deformities of, 446.

Fournier's, Fournier, 9.

Fractures, Results of operative treatment of associated, due to war injuries, 95. Peripheral nerve lesions associated with, 703. Alleged malpractice in treatment of, 841. Treatment of fractured, 37. Osteomyelitis with chronic, 33. Routine treatment of by operative methods, 333. Temporary plating of, of long bones, 335. Treatment of associated, by bridge grafts, 330. Treatment of fractured, 330. See also names of bones.

Frostbite, Treatment of with sorbents, 137.

Fuchsian, Reverse selective bacteriostatic action of acid, 156.

GALL-BLADDER, Associated pathology of disease of, 24. Bacteriology of, 89. Roentgenological study of pathology, 100. Connective tissue changes in, 33. Tumor of, 13. Studies in pathology of, 39. Surgical considerations of, 3. Disease of, 432. Relation of disease of, to secretory function of stomach and pancreas, 43. Importance of indirect sorbents findings in chronic infection of biliary ducts and 43. Surgical treatment of disease of, 437. See also names of gall bladder diseases and operations.

Gall stones, Etiology of, 3. Gallstone, Simple procedure for testing circulation in, of extremities, 97.

Gastric, Gastric, Preservation of motor root of in division of sensory root for infarct treatment, 70.

Gastro-enterostomy, Effect of on gastric function as interpreted by fractional test meal, 415. Roentgenological investigations on fractional behavior of stomach in various types of posterior gastrostomy and comparison of its value in ulcer of stomach and duodenum, 416.

Gastro-intestinal tract, Circulating operations in surgery of, 8. Intraoperative insertion of heated capillary plates of radium combination in tumor of, 240. See also names of parts of gastro-intestinal tract, diseases, and operations.

Gastrostomy, Surgical treatment of, 433.

Gale, Thoracic abdominal, 209.

Gangrene, Tuberculosis, treated with radium, 27.

Glands, Chronic suppuration of parotid, 9. Relation of calcified abdominal, to urinary surgery, 266. Tuberculosis of salivary, 71. Tuberculosis of neck and spinal accessory paralysis, 295. See also names of glands.

Gleets, Etiology and treatment, 27. Tests and tests of, 336.

Glossitis, Hypertonic, as prophylactic against anesthetic effects of operation and anesthesia, 427.

Glossitis, Transplantation of tumor tissue from cases of, cultured, 343.

Gout, Desperate risk, 79. Clinical experience in operations for with co-ordination of recurrent and operations for recurrence, 65. Recurrence of, 66. Malignant, 220. Histologic study of effect of ligature of thyroid vessels in encephalitis, 206. Goetack test and radiology, 20, 297. Hypodermic, 21. Encephalitis, 414. Arthritis, and technique of operation for, 43.

Grafts, Aspiration in transference methods, 443.

HÆMATURIA, Ureteral structure as etiological factor in so-called essential, 91.

Hæmorrhage, Diagnosis and treatment of intracranial in newborn, 30. Following abdominal operations, 316. In newly born, 373. Transfusion of blood in acute anæmia due to, 454.

Hand, Rigidity of, 430. Partial endoneural resection in spastic contractures of in infantile hemiplegia, 445.

Harlequin, Operative treatment of complete double, 77. Types and operative treatment of, and cleft palate, 77.

Heart, Surgery of, 3, 307. Probing rupture of, and its mechanism, 5. Hydrated cysts of, 80. Injections of adrenalin into for resuscitation, 205.

Hemianopia, 1. Injury in cause of diabetes insipidus with bilateral, 260.

Hepatic duct, Efficiency of Keck drainage of, 3.

Hepatoduodenostomy for stricture of bile duct, 320.

Hernia, Non traumatic diaphragmatic, 2. Radical operation for femoral, with aid of active muscular closure, 70. Relation of epigastric, to gastric ulcer, 68. Radical operation for inguinal and femoral, with plastic use of uterus through abdominal cavity and simultaneous laparotomy for another condition, 71. Operative treatment of difficult, 7. Gangrenous perforation of stomach complicating diaphragmatic, 7. Anatomy and identity of encysted, and infantile, 673. In, for operation upon by combined route, 54. Operative treatment of umbilical, 309. Pathological relationship between ulcerative processes in stomach and duodenum and epigastric, 30. Inguinal on right side following appendectomy, 37.

fatfoot, 337
 anatomical, experimental and chaul investigations concerning phrenic, and innervation of diaphragm 358
 lesions of paratracheal area, 4
 Nerve, Methods for bridging defects in, and new method of autotransplant, 3
 technique and results of resection of stomach, 3
 injuries of peripheral, associated with fractures, 07
 experimental results of cable grafts and tubes of fascia lata in repair of peripheral
 04
 solitary fibrosarcoma of trunk of peripheral
 04
 pulvane extensibility of motor following parenteral injection of heterogenous serum, 06
 anatomy and surgical bounding of in abdominal wall 70
 back ward location of seventh cervical vertebra with weighted compression of roots of 77
 electrical method in diagnosis and prognosis of paralysis due to lesions of peripheral, 80
 re suture of peripheral, 8
 technique of suture of 146
 surgery of sympathetic 350
 injuries of of arm, 35
 resection of roots of spinal 390
 topography of, of brachial plexus and villary vessels
 entrance into subclavicular space, 359
 transplantation of roots of spinal flaccid paralysis 448
 ca crurae apomata in peripheral 450
 in lateral resection of posterior for vulval pruritus 467
 Ventricle, Preservation of motor root of paravertebrae ganglion in division of sensory root for trifacial due to lesions of paratracheal area, 4
 Ventricle, Diagnosis and treatment of intracranial hemorrhage in 30
 hemorrhage in 373
 No head touch technique, 70
 Tons 450
 Vein, Cephalocoele in, 56
 relation of orbital affections due to conditions in, 09
 metal relay and cobbler's splint dressings in plastics on 7
 plastic operations on with tubed temporal pedicled forehead flaps 293
 injection of alcohol in treatment of hypermetropic rhinitis and neuritis originating in 388
 correction of external deformities of by intranasal root 358
 perforation of septum of in cocaine suffer 489
 rare chondroma of 489
 osteoma of accessory sinuses of 492
 Ventricle, Segmental localization of pain through paravertebral injections of as differential diagnostic method in intra-abdominal disease 435

OBSTETRICS Problems of uterine 1 in stillbirths and death of newborn infants 37

Oesophagus Carcinoma of thoracic 6
 combined trans pleural and transperitoneal resection of thoracic and cardia for carcinoma 16
 plastic repair of from stomach, 16
 symptoms, perforation of revealed by sigmoidoscopy, 69
 carcinoma of alveolar epidermoid and, congenital trachea of with fistula into trachea 306
 surgical treatment of 306
 surgery of mediastinum including heart and 307
 treatment of cancer of with radium 430

Omentum, Torsion of great, 379
 pathogenesis of torsion of 42

Ovary of long duration, 26

Operations, Adhesions in abdominal cavity following 73
 improvement in care before and after 73
 typical in cases of severe adhesions due to pyelocystitis 89
 administration of cathartic after abdominal 89
 etiology of pulmonary complications following 90
 hemorrhage following abdominal, 3
 6
 changes in physicochemical structure of blood plasma, 114
 accelerated sedimentation of blood cells following surgical, 35
 Stomach as source of rejuvenation in old age and other conditions such as impotence and depression, 38
 hypertonic glucose solutions as prophylactic against injurious effects of, and anesthesia,

407
 Morestin for contractures of fingers, 446
 Loxure bifurcation 443, theoretical basis and practical application of blood pressure estimations on, 453
 See also names of operations, organs, and parts

Ophthalmia Uveal pigment in sympathetic 300
 focal infection in tarsal causing tuberculosis 300
 diagnostic and therapeutic use of uveal pigment in myomas of uveal tract and sympathetic 309
 etiology of sympathetic 313

Organs, Parathyroid and transplantation of 07

Orthodontia Physiological principles in, 90

Osteitis Hereditary symmetrical of lower limbs 44

Osteitis deformans Pathology of 333 in monkeys 334

Osteitis fibrosa Polycystic anet of 33

Osteochondritis deformans corac juvenalis 36
 course and results and familial occurrence of 36
 localization 36

Osteochondritis dissecans 334

Osteoid 91
 erous osteoid 97

Osteoma Ectopic (chronic non suppurative) in adult, 14
 primary intralacal necrosis of diaphragm 92
 hemorrhagic 9
 perovital sarcoma associated with 93
 treatment of acute 9
 peculiar form of tumor like 75
 use of large Rivolin grafts in healing of chronic 142
 suppurative due to colon bacillus 334
 See also names of bones

Osteoporosis from fixation and non use, 13

Osteoparathyroid with eleven fractures, 33

Osteosclerosis (congenital) 333 (fragilis generalisata) 333

Osteotomy erous osteotomy, 97

Otitis media Septic type of temperature not referable to ear in acute suppurative, 387

Ovary Adenocarcinoma of retroperitoneal space associated with tarry cysts arising in islands of adenocarcinomatous tissue in, 43
 importance and relation of intestinal adenocarcinoma of endometrial type 1
 hematomata of of endometrial type, 43
 results of surgical treatment of long standing tumors of, 43
 clinical results of grafting of 7
 endometriosis and endometriomyomas of 7
 hematomata of of endometrial type, 66
 solid carcinoma of 83
 fibroma and sarcoma of 53
 statistics of carcinoma of 55
 fibromata of, 467
 explanation of axal torsion of 468

Ovary, Influence of, on ovaries and uterine cycle 5

PAIN Segmental localization of through paravertebrae novocaine injections 435

Palate, Congenital malformations of and lip type and operative treatment of harelip and cleft 77
 hare lip and cleft 219
 typical plastic operations for congenital fissures of lip and 30

Pancreas Multiple calculi in 3
 preliminary stages of acute necrosis of, 3
 large cyst of 9
 cyst of, explained, 334
 studies on function of, 34
 total excision of 376
 diagnosis and treatment of primary carcinoma of, particularly of body and tail, 37
 clinical experience with extract of in treatment of diabetes mellitus, 356
 relation of disease of gall bladder to secretory function of stomach and, 43

Pancreatic duct, Partial obstruction of, by round worms, 336
 acute hemorrhagic pancreatitis due to round worms in 336

Pancreatitis, Traumatic, 90
 bile factor in, 334
 acute, 35
 acute hemorrhagic, due to round worms in pancreatic duct 336

Papilla of liver Treatment of carcinoma of 26

Parathyroid and organ transplantation 07

Paralysis, Symptoms of spinal tumors and, of legs due to compression on cord, 04
 electrical methods in diagnosis and prognosis of, due to lesions of peripheral

- serres, 80 tuberculous glands of neck and of spinal accessory nerve, 295, injury of spinal cord in breech extraction as cause of, 46 legs in childhood, 372 tracheal plastron of spinal nerve roots in thorax, 448
- Paraphimosis, Bilateral subacute suppurative penoscrotic, 474
- Parathyroid. Tumors of, 44 hyperplasia of, and bone destruction in generalized carcinoma, 45
- Parotitis, Chronic suppurative with acute exacerbations, 460
- Parotid, Responsibility for of physicians in accident case, 465
- Pedunculotomy, Value of, in diagnosis and treatment, 305
- Pemphigus, Penetrating wound of with puncture of intestine, 20 immediate repair of lacerations of vesicles, 9
- Perforated, New light on gastric, 309
- Peritonitis, Localization of pain severe in parietal and diaphragmatic, 324 accumulation in cavity of of gases injected into, 337 infection into, 473
- Peritonitis, General septic, and its treatment, 8 surgical treatment of, 71 diagnosis of, and peritoneal transudates by means of abdominal puncture, 14 capillary tube, 7 intestinal obstruction following acute appendicitis and, 316, feasible in treatment of 4 bactericidal and inhibitory power of ether in, 4 Ochsen treatment in, 472
- Pharynx, Etiology of barrett's back of, 5 large operative defect in, covered by primary transplantation of skin flaps, 70
- Pharyngotomy, Fibrosis of lung following ligation of pulmonary artery combined with, and partial occlusion of pulmonary veins, 304 radium, as therapeutic measure in unilateral pulmonary phthisis, 49
- Physician, Responsibility for payment of, in accident case, 465
- Physiometry, Surgical treatment of, 9
- Placenta, Suck for damages for alleged failure to remove, 184 influence of, on mammary gland, 4 hemorrhagic infarct of, and their relation to white infarct formation, 369
- Placenta previa, Association of fetal monochorionic and dichorionic with, 473
- Pleura, Air embolism following various diagnostic or therapeutic procedures in diseases of and lung, 4 effect of heavy radiation on, and lungs, 69
- Pneumoperitoneum for X-ray exploration of kidney, 36
- Pneumoperitoneum as aid in diagnosis of subdiaphragmatic conditions, 435
- Pneumothorax, Artificial, 304
- Pregnancy, Clinical and embryological report of extremely early fetal, with study of intra uterine and ectopic decidua vesicularis, 43, 71 Gross during, 9 and tuberculous, 80 bilateral detachment of retina in septitis of, 20 after operation for cancer of breast, 571 Wassermann reaction in, 366 blood sugar during, 366 tumors of breast arising during and lactation, 368 etiology and treatment of tubal, 369, uterine fibromyoma complicating, 470, cause of tubal, and tubal termination, 471 immediate versus delayed operation in colicaps following ruptured ectopic, 47; ovarian, 47
- Prostate, Form of hyaline cyst in, and its treatment, 44 carcinoma of, 32 carcinoma in interepithelial punctures metastatic from, 65 pathology and mechanism of hypertrophy of, 97 personal operation for abscesses and stones in, 465 infections of adenocarcinoma of, 465 problems of 312 recurrence of benign, 383
- Prostatectomy, 97 new technique for perineal, 3 anastomosis for, 343; some results of, 482
- Prostatitis, Streptococcal, 46
- Protein therapy, Scientific basis for non-specific, 450
- Pseudarthrosis, Surgical treatment of traumatic, 97
- Psoas, Treatment of apoplexy in, by use of aseptic charcoal intravenously, 290 surgical treatment of gas-bacillus infection of the uterus in, 29 blood sugar during pregnancy and, 366
- Pyelitis, Diagnosis and treatment of, 48 treatment of, 476
- Pyelography, Study of various chemicals used in, 373
- Pyelonephritis, Hematogenous acute infectious septitis and, 47
- Pylorectomy for high ulcer of lesser curvature, 3
- Pylorus, Hyperplastic stenosis of, 8
- Pyospermia, Postoperative healing in destructive, 477
- Pyroplasmidiosis, 49
- Pyroplasmid opening into urinary bladder, 3
- RADIATION**, Veres' essential on of uterine fibroids, 471 effect of, with regard to postoperative recurrence of carcinoma of breast, 167 cancer of the lip treated by electrocautery and, 471 Corfield's test as, 24 in disease of throat, 297 neurovascular of sensation in, 360 See also Radicals, Roentgen
- Radicality, Indications for posterior, 370
- Radicals, Effect of on normal tissues of body and speed of dogs and its therapeutic application, 39, primary carcinoma of female breasts treated with, 45, pre-operative treatment of malignant tumors of bladder with, 49 treatment of cancer of lip by, 97 treatment of carcinoma of tongue, 14 treatment of carcinoma of larynx, with evaluations of technique and status of, in treatment of carcinoma of bladder, 14, 5 treatment of recurrent inoperable carcinoma of breast with and roentgen, 121 174; in section of needles containing, through thyroid membrane in carcinoma of larynx, 38, retroperitoneal insertion of burned capillary glass tubes of examination of, in tumor of gastric intestinal tract, 249 structure and technique in treatment of fibrosarcoma of uterus, 14, 250 treatment of cancer of pelvic organs by moderate irradiation with, 35 and roentgen, 121 treatment in metastatic testicular tumors, 366, tuberculous ganglions irradiated with, 272 carcinoma of tongue treated by embedding glass ampoules containing, 294, treatment of carcinoma of mouth with, 394 results and technique of treatment of carcinoma of breast with, 304 co-operative measure results between and X-rays concerning energy absorbed, 1 depth, 306 action of burned tubes of examination on neoplasia in plants, 36 in treatment of leukemia, 36 treatment of cancer of oesophagus with, 420 treatment of uterine hemorrhage of non-malignant type, 463, use of in treatment of cancer of uterine cervix, 466. See also Radicals
- Radical-colloidal substances, Electric fixation of, on embryonic and neoplastic cells and its importance in diagnosis and treatment of cancer, 373
- Radical Compression fractures of lower end of, 36 advances in treatment of so-called typical fracture of, 35 large myeloid sarcoma of, in both tumor white throughout, 335 congenital bilateral forward luxation of head of, 339, resection of distal end of, 340 for shortening of, following fracture, 343
- Reconstructive surgery, 443
- Rectovesical, Treatment of, 364
- Rectovaginal space, Adenomyoma of, associated with hairy cysts of ovary, 43
- Rectum, End results of operations for carcinoma of, 3 rare diseases of, 80 age- and sex-incidence, and prophylaxis of carcinoma of, and pelvic colon, 74, scalping operation for abscess about, 174, anore-

- ment of lymph nodes in carcinoma of 3 gonorrheal structure of 3 8
- Rejuvenation, Resection of the deferent canals for 5
- ligation of vas deferens by Steinach method as means of in old age and other conditions, 38
- Resection Intracardiac injections of adrenalin for, 305
- Retina, Significance of hemorrhages of, 55 bilateral detachment of in nephritis of pregnancy 30
- Retroperitoneal cysts 435
- Rhinitis, Injection of alcohol in hypenesthetic, 383
- Ribs Cervical, 244 post typhus fistula of, 4 6
- Röntgen ray Diagnosis of more important tumors of long bones with, 34 new universal exposure table of Fiedler for 34 achylia gastrica as revealed by 35 method of exploring kidney by pneumoperitoneum and, 36 375 treatment of fistulae with 36 technical and clinical aspects of deep therapy with 36 demonstration of intracranial passages by 38 ultraviolet ray and, as physiological complements in therapy, 39 treatment of cancer of lip with 39 study of pathologic gall bladder with 39 effect of heavy radiation with, on pleura and lungs 69 treatment of recurrent inoperable carcinoma of breast with radium and 67, effect of heavy radiation by on pleura and lungs 69 peptic ulcer with deformities of viscera evidenced by 4 scientific basis of short wave length therapy with, 245 statistics and technical aspects of treatment of fibrosarcoma of uterus 215 350 best method of treating terrene fibrosarcoma with 5 treatment of metastatic testicular tumors with, 366 demonstration of nasolachrymal passages with, 360 result and technique of treatment of carcinoma of breast with, 30 determination of intensities of, 359 newer investigations of, dosage 359 comparison measurements between radium and, concerning energy absorbed 1 depth, 350 necessity for caution in employment of high voltage therapeutic agent against malignant disease 360 castration of male with 383 important points in technique of examination of urinary tract, 384 investigations on functional behavior of stomach in various types of posterior retrocolic gastro-enterostomy as shown by 426 importance of indirect findings in chronic infection of biliary duct and gall bladder 432 pneumoperitoneum as aid in diagnosis of subdiaphragmatic conditions, 435 deep therapy with 437 injuries from deep therapy with 438 carcinoma due to 439 results of treatment of malignant disease with, 439 examination of urinary tract with during excretion of sodium iodide 484, treatment of tonsils with, 491 results of therapy in chronic tonsillitis, 49 See also Radiation
- Round ligaments, Restoration of an retroversion of uterus 86
- Round wounds, See Ascaris
- SALIVARY** glands Chronic suppuration of 1 tabes colicae of, 1
- Scapula bone Isolated fracture of 437
- Scapula, Crepitation of 256 so-called crepitation of 438
- Scapula, Scapulo palsy and 351 relation of to flatfoot 357 surgical treatment of chronic 430
- Scoliosis Operative treatment of 245
- Sigmoid, Emphysema of result of diverticulitis of sigmoid with perforation 53
- Sesamoid cartilages New approach 243
- Septicæmia, Treatment of postperil by intra osseous administration of mercurochrome 90 postobstatal due to hemolytic streptococci 59 bacteriology of fatal following miscarriage or abortion 309
- Serum, Diagnosis of cancer by means of, reactions of galvanic excitability of motor nerves following parenter injection of heterogenous 66
- Shock, Action of ether on circulation in traumatic 289
- Shoulder Sprains of 437 snapping and voluntary dislocation of 435 new arthrodesis of 445
- Shoulder girdle Paralysis of 77 mobilization of entire as aid in thoracoplasty for pulmonary tuberculosis 4 0
- Sigmoid, Emphysema of scrotum due to diverticulitis of the perforation, 53
- Singhania 244
- Sores, Surgical anatomy of superior septal 9 infection of sigmoid and lateral 74 total blindness cured by ethmoid operation and opening of sphenoid 7 lateral empyema of frontal 27 malabsorption in pneumonia and irrigation of maxillary 384, 400 carcinoma of maxillary 389
- Snomes, Outcome of accessory nasal 490 disease of and lung infections, 489
- Skin Homoplastic transplantation of explants of adult frog 1 7 histologic processes occurring in implanted by Braun method 456
- Skull Polyps of base of 56 surgical operations on gunshot wounds of, during air 74 spontaneous occipital pneumocele of of mastoid 219 75, stress on of fetus during labor 37 fracture of and its complications 409 fracture of base 215 superficial hemorrhage on opposite side 41
- Spina bida, Casserius pathology and treatment of 20 its sequelae, 246
- Spinal cord Analysis of cases of tumor of 30 77 effect of radium on normal tumors of brain and of dogs and its therapeutic application, 30 symptomatology of tumors of and compression paraplegia complete section of dorsal by direct contusion results of removal of tumors of 3 mechanical effects of tumors of 79 ocula sarcoma involving brain and 300 fatal congenitive hemorrhages in lung and due to monocystic bodily exertion injury of in breech extraction as important cause of fetal death and paraplegia in childhood 37 fracture of spine with involvement of 446 typhoid spine 215 symptoms of affection of 447
- Spine Röntgenotherapy of intracranial passages following injection of air into 38 diagnosis of traumatic diseases of and insufficiency of vertebrae 60 symptomatology of tumors of and compression paraplegia beef bone in stabilizing operations on beef bone bridging in tuberculosis of 245 operative treatment of curvature of 245 luxation fracture of cervical 348, place of operations for fixation of in treatment of Pott's disease, 348 osteomyelitis in Pott's disease of 349, operation as part of conservative treatment of Pott curves of 349 crush fractures of 349 congenital curvature of as intra uterine deformity of eight bones, 446 fracture of, with cord involvement, 446 unusual case of typhoid with symptoms of spinal cord affection 447 propping operation on, in spondylitis, 447 arthritis of lumbar 447 See also Vertebrae
- Spleen Relationship of surgery to disease of, and in 31 encysted hamatomata of 34 surgical treatment of non traumatic affections of 348 sarcoma of, 3 8 spontaneous rupture of, cured by splenectomy 435, ligation of splenic artery in surgery of 433
- Splenectomy Spontaneous rupture of spleen cured by 433, changes in distribution of colloidal carbon in livers of rabbits following 433
- Spondylitis, Traumatic, 244 rheumatic, 245 propping operation on vertebral column in treatment of 447

Ureter Pathological complications with duplication of renal pelvis and, 47 stricture in catheterization of, 49 stricture of an important etiological factor in so-called essential hematuria, 94 diagnosis of small concretions in renal pelvis and, 94 double kidney of double, 96 supernumerary with extra renal opening, 96 extreme dilatation of, 93 cystic enlargement of vascular extremity of right, and its treatment 93 primary tumors of, 94 anuria due to calculi in, 97 operative treatment of cystic dilatation of, caecal end of, 473, accidental bilateral occlusion of, 478, limbs of, 479 conserving renal surgery associated with treatment of structure of, 479 acquired structure of male, 480 *See also* under Urinary Tract

Ureteropyelogram, New method of making, 474

Urethra, Primary carcinoma of female, treated, 43 resection, 45 gunshot injuries of, and their treatment 5, prolapse of female, and eversion of external orifice of, 8 renal colic associated with conditions of, 18 ossein, 376 associated closed traumatic ruptures of posterior and bladder, 380 unusual case of traumatic structure of, 483 *See also* under Urinary Tract

Urinary tract, 1 experiences in aural anesthesia in operations on, 63 relation of calcified abdominal glands to surgery of, 368 several aspects of surgery of, 384 important points in technique of roentgenological examinations of, 384, cystoscopic appearances in tuberculosis of, 470 fulguration in treatment of affections of lower, 48 roentgenography of during excretion of sodium iodide, 484 mechanism of formation of calculi in, 484 485 *See also* names of parts diseases, and operations

Urine Test for sugar in, in pregnancy 366 distaste blood and, as measure of renal efficiency 374

Urotropine, Action of, 374

Uterus, Prolapse of with pelvic relaxation, 41 relation of hypertension to fibroid disease of, 4 indications for total ablation in certain cases of rupture of, 4 significance of aneurysm of cervix and as indicated by arteriography aneurysm of artery and cist of due to aural bomb injury, 4 irradiation versus excision of fibroids of, 4 adenocarcinoma of fundus of, 4 end results of surgical treatment of carcinoma of cervix of, 4 intermittent asphyctic hyperkemia in infection of cervix of, 44 results of treatment of carcinoma of cervix of, 4 cancer in stump of cervix of, forming metastases in vermiform appendix, 5 myoma of, and accident, 6 retroversion of following delivery, 20 after cesarean section, 20 action of ergot and solution of hypophyses on, 80 radical operation for vaginal and leucorrhea, 11th plastic sac at through abdominal cavity and simultaneous laparotomy for another condition, 7 use of sutures as tractors in vaginal operation for prolapse of, 86 pre cancerous conditions of cervix of, 86 restoration of round ligaments in retroversion of, 86 surgical treatment of puerperal gas bacillus infection of, 9 statistics and technique of treatment of fibromyoma of, by radiotherapy, 50 improved method of supporting bladder and apex after vaginal hysterectomy for prolapse of, 50 best method for treatment of fibromyomata of, by means of roentgen rays, 5 cancer of, 5 fistula involving bladder vagina, and,

53 treatment of cancer of, 11th moderate irradiation 55 statistics of cure of, 45 microscopical as compared with clinical diagnosis of malignant neoplasms of, 363 pathology of bleeding of, 363 treatment of ystocoele rectocoele and prolapse of, 364 cesarean section for delivery of pregnant hall of double, 370 effect of resection of on coagulation of blood, 46 elev. of vessels of ventrofixation of, 46 radium in treatment of hemorrhage of, of non malignant type, 463 chronic inflammation of cervix of, and its treatment, 46 diagnosis of cancer of, 466 radium treatment of cancer of cervix of, 466 vaccination of different malignant tumors of tubal horn in, 468 fibromyomata of complicating pregnancy, 470 classical cesarean section under local anesthesia with temporary fixation of, 473 acute complete inversion of, 47

Uteral pigment Therapeutic use of in myopic ophthalmia, 200 diagnostic and therapeutic use of in injuries of, of tract, 216

VAGINA New method for surgical treatment of anovulatory, 44 formation of artificial, 44 53 improved method of supporting bladder and after vaginal hysterectomy for procidentia, 50 fistula involving uterus bladder and, 5 treatment of cancer of, 11th moderate irradiation 55 posterior drainage through, 11th description of new instrument used as pelvic guide, 364

Vaginal epithelioma Carcinoma of

Vas deferens Local and general effects of resection of, 5 ligation of by Steinach method as means of reversion, 38

Vena Significance of aneurysm of tensor ceculi as indicated by anastomosis of uterine artery and duct aural bomb injury, 4 fistula of femoral artery, and on level with origin of profunda, 53 bacterial content of blood of portal and origin of liver abscesses, 430 aneurysm of subclavian artery and with reversal of circulation of arm, 455

Veins Fibrosis of lung following ligation of pulmonary artery combined with pneumothorax and partial occlusion of pulmonary, 324 accumulation in peritoneal cavity of gases injected into, 357

Ventrioloscopy and intraventricular photography in internal hydrocephalus, 4

Vertebra Backward luxation of seventh cervical with related compression of nerve roots, 37 lateral subluxation of third cervical, on fourth, 347

Vertebrae Diagnosis of traumatic diseases of apical column and insufficiency of, 50 puncture of abscess anterior to, 244 treatment of painful affections involving cervical, 347 *See also* Spine

Vision of injuries of tracts of brain, 5

Vul Bilateral resection of pudendal nerves for priapism of, 457

WASSERMANN reaction in pregnancy, 366

Wound, Seat of damages for alleged leaving of gauze in, 85

Wounds Physiology of, 407

Wrist Rare injuries of, 38 dislocation of semilunar carpal bone of, 34 sprains of, 437

INDEX TO BIBLIOGRAPHY

GENERAL SURGERY

Surgical Technique

- Operative Surgery and Technique, 58, 3 80 273 30, 495
- Aseptic and Antiseptic Surgery 58, 273 30 495
- Anesthesia, 58, 31 80 273 30 495
- Surgical Instruments and Apparatus, 58, 3 273, 30 495

Surgery of the Head and Neck

- Head, 58, 3 802, 74, 391, 495
- Neck, 39, 32 803, 274, 392 497

Surgery of the Chest

- Chest Wall and Breast, 39, 32, 203, 274, 393, 497
- Trachea and Lungs, 60, 3 803, 275, 393, 497
- Heart and Vascular System, 60, 3 803, 75, 393, 498
- Pharynx and Esophagus, 60, 32, 804 275 393, 498
- Miscellaneous, 32, 275, 393, 498

Surgery of the Abdomen

- Abdominal Wall and Peritoneum 60 33, 804, 275 394 498
- Gastro-Intestinal Tract, 60, 33, 804 276, 394 499
- Liver Gall Bladder Pancreas, and Spleen, 60 34, 806, 78, 396, 500
- Miscellaneous, 62, 135, 806 278, 396 50

Surgery of the Extremities

- Conditions of the Bones, Joints, Muscles Tendons, Etc 63, 35, 807 70, 397 50
- Fractures and Dislocations, 63 36, 807 279 397, 503
- Surgery of the Bones Joints, Muscles, Tendons Etc 64, 36, 808, 280, 398, 504
- Orthopedics in General, 36 398, 505

Surgery of the Spinal Column and Cord

- Diseases and Deformities of the Spine and Cord 64 36, 808, 280, 398, 505

Surgery of the Nervous System

- Diseases and Surgery of the Nerves 64 37 809 28

Miscellaneous

- Chemical Entities—General Physiological Conditions, 65, 37 809 28 399 506
- Sera, Vaccines, and Ferments 65, 37 28 399, 507

- Blood, 65, 37 809, 282, 399, 507
- Blood and Lymph Vessels 65 38, 3 400 507
- General Bacterial Infections 400, 508
- Surgical Diarrhoea, Pathology and Therapeutics 65, 38 0, 3 400 508
- Experimental Surgery and Surgical Anatomy 65, 38 400 508
- Radiology and Radium Therapy 65 38 0, 282, 400 508
- Industrial Surgery 66 39 508
- Hospitals, Medical Education and History 66, 40 283 401 508
- Legal Medicine 67 40 283 40 509

GYNECOLOGY

- Uterus 67 40, 283 40 509
- Adrenal and Peri Uterine Conditions 67 40 283 40 509
- External Genitalia 67 40 283 402 509
- Miscellaneous, 67 140 284, 402 5

OBSTETRICS

- Pregnancy and Its Complications 68 14 284 402, 510
- Labor and Its Complications 68, 4 284, 402, 5
- Puerperium and Its Complications 68, 14 2, 284, 402 51
- Newborn, 68, 14 3 85, 402, 5
- Miscellaneous, 68 141 3 403 5

GENITO URINARY SURGERY

- Adrenal Kidney and Ureter 69, 4 3, 285 403 5
- Bladder Urethra and Penis, 69 14 4, 86, 404 5
- Genital Organs, 69, 14 4 286, 404, 5
- Miscellaneous, 70 142, 4, 287 404, 5 5

SURGERY OF THE EYE AND EAR

- Eye, 70 143 5 287 405, 5 5
- Ear 7 43 5 287 405, 514

SURGERY OF THE NOSE, THROAT AND MOUTH

- Nose, 71 144, 6, 288, 405 514
- Throat, 71 144, 16, 288, 406 514
- Mouth, 72, 144, 6, 288, 406, 5 5

INDEX TO AUTHORS

- Abadie 8
Abell, J 43
Abrahamson H 330
Adams W II 34
Adams W R 43
Adams W R 3
Adevi, J
Alberti, O 27
Albertus, 45
Allen, D S 3
Allport, F 457
Alvarez, W C 73, 309
Appert, F L 309
Archibald, F W 307
Armstrong, L B 47
Arnold, C G 4
Aschner P W 264
Ashley, A D 443
Aufrecht, G, 4
Aulhausen, G 76, 44

Babcock J W 40
Bacon, C S 37
Bacon, D K 42
Bainbridge W S 79
Baker C F 75
Bakker C, 439
Ballou, G M
Baldery F C 42
Ball, W G 476
Banting, F C 356
Barney J D 26 383 476
479, 483
Barne G 9
Barnes B S 3
Bauer J H 33
Beck, A C 37
Beck, O 15
Beckers, M 5
Beckle, A C 8
Behrendt, 74
Bell, W B 7
Benedict, F G 4 4
Berry G 49
Bettman, R B 3 5
Beck, R 45
Becker E 44
Bord, F D 44
Bjale, D 57
Blackman, J F 60
Blackwell, H B 328
Blackwell, K S 389
Blahd, M E 409
Blake, E M 20
Blanchard, 76
Bloodgood, J C 5, 80 330,
332, 335, 436
Blum 294
Blum, D M 3 5
Blum, P, 07
Bochner, L 74
Boomer, A 01

Bolin II 43
Bolin, R 76
Bonnet, J 7
Booney, J 6 463
Bottomley, J T 320
Boutman, H A II 34
Bourginghouse, G 80
Bowen H II 266
Boyd E 49
Boyd, G L 4 8
Boyd, W 3 0
Brasch, W I 47 49 375
Breadburn, M 34
Bradford, I II 34
Brady L 329
Brady, W 1
Braun W K 94
Brund, G 97
Bretschneider 6
Brewer G E 4
Brown, G O 47
Brown, L T 01
Brown K P 235
Brown, T A 69
Brown, T H 260
Bruce H A 378
Browning I 247
Browett, H 9
Brunson S A, 99
Bryan W A 353
Bull, P
Bullock, H A 53
Bullock F D 35
Burns H C J 75
Burtis F I 3
Burdett, J I 05
Burdick A L 38
Burlet W C 7
Burnham C F 4
Burnham M P 432
Burns, J W 465
Butler T H 55

Cahen, J 77
Callander C L 449
Calot, F 38
Calvé, J 349
Calvagna D 454
Camera U 44 380
Campbell W C 24 339
Campbell, W R 336
Cannabatt, M 439 44
Cannik, J 96
Cappi, J A 24
Carones, A M 20
Carshaw, J 328
Carter J M 269
Carter, R F 30
Case, J T 36
Castro, M 289
Cassico, A 435
Caylor, H D 266
Cecil A B 3

Chamberlain W B 486
Charles J W 27
Chase H C 34
Chavira J 34
Chen W S 5
Chetwood L II 466
Chian O M 06 245
Christopher F 448
Chrysis M 320
Chubb J W 336
Ciccia S 440
Cimozzi O 7
Cimatta, A 94
Clark, A J 436
Clark, J G 55
Clot H M 9
Colford, R B 245
Cohen H 1
Coleman G H 24
Collins, H 15
Collins A W 435
Collins, C U 69
Collins, I K 3
Cokson, J A C 483
Cone S M 213
Cone H R 83
Cook, A G, 246
Cordes, F C 54
Corkery J R 33
Cornell, L
Cormack 245
Corradini, J A 90
Coscarelli A 07
Cotte, G 369
Cotton F J 244
Coyte, R 70
Cribbree, E G 260
Crane, A W 35
Crawford R II 47
Crawshaw J L 48
Crile D W 205
Crile, G W 83, 4 4
Cremery R F 225
Crothers B 27
Cullen, T S 7 76
Cunningham R E 477
Curtis A H 467
Curtis, M R 35
Cutler E C 20 3
Cutter L 4 8

DeFano, C 200
Dahl Iverson, E 3 4
Dahlstrom, S 63
DeBarnes H 415, 490
Devland, F M 219, 36
D'Almeida, G 24
Delmar K 326
Dandy W E 9
Darling, B C 493
Darnall, W E
Davidson, H J 470
Davies, H M 304

Davis, E P 20
Davis, C G 151
Davis, L A 5
Davis L I 7
Davis W II 7
Dean W 9
DeBarnes Leland R 91
DeBryne I 7
DeGastano L 83
DeLamoy I 38
Delcher H A 260
Delbert 36
Delore X 7
Dezner B S 7
De Ott, D 6
Deutschlander 443
Dickie J K M 64
Dieckmann, W J 369
Donald, A 43
Dorland, W A 43 7
Doob H P 269
Dremsa, J G 89
Dremsa, E 90
Droener L 6
Dubaneldre I I 80
Duane W 248
Dubouché II 34
Dubu, J 65
Duff, D 239
Dunet C 7
Dunham, E K
Dunham, K 489
Dunning H S 293

Eastman J R 330
Ezberg E
Edington, G H 333
Edwards 5
Eggers C 4 6
Eggen, H 9
Einhorn, M 24 439
Eisenstadt, D N 267 376
384
Eitner E 7
Einhorn, G 378
Einhorn, N 309
Elmiger, 74
Elliot R H 366
Elberg, C A 79
Epstein, G 446
Epstein, G I 20
Emery I F S 71
Emery J F S 41 488
Eustis, R S 20

Faith, G 360
Fander W A 74
F T 4
Fedempe, M N 9
Feiler, E 265
Feiler, W 378
Feiler, Q 37
Fip F A 493

- Figurnoff K M
 Finsterer H 93, 427
 Fischer H 306
 Fischer M. H 390
 Fischer A A 356
 Floerchen, H 45
 Foot, N C 433
 Frankel, J 93
 Franzgrubert, P 196
 Frank, R T 16, 27, 364
 Frank, F. J 31
 Frankha, W S 34
 Frazer F B 217
 Frazer C H 30, 77
 Free O T
 Freiberg, A H 334
 Friedenwald, J S 301
 Friedland, M O 74
 Friedberg, M 433
 Frick, O 37
 Frostman, R M 5
 Fullerton, A 374, 474
 F. Ross, H D 26
 Galland, M 349
 Ganser, E. 95
 Gammel, R., 157
 Gattwood, 90
 Gaudet 97
 Gaudin, C L., 265
 Gaylord, H R 300
 Gerlach, W. 428
 Gibbard, R K 333
 Gifford, S R., 300
 Giler, A E., 405
 Giordano, A S 193 296 324
 Girard, F R., 364
 Girivastano, G R 349, 443
 Glass, F 479
 Glaser, O 399
 Gloria, O 304
 Glover D M 33
 Goerke C 90
 Goepel, R 3
 Goetse, O 49
 Gokschmidt, W 476
 Gokschmidt, J A 97
 Gokschmidt, J 49
 Gorman, V 95
 Goud, F L 47
 Gordon, A 64
 Gordon, J K., 43
 Gordon, O A., 464
 Gottlieb, M. J 80
 Grad, H., 303
 Graham, E. A 51
 Grant, A R 389
 Grant, F C 4
 Graves S 41
 Gray H M W 27
 Greenhill, J P 371 473
 Grewal I I, 337
 Grifflin, H L 43
 Groves, W T 383
 Groves W R 373
 Grout, 347
 Grunert, C G 451
 Guy E F 425
 Haas, 470
 Haas, 430
 Hackenbrock, M 246 446
 Haemler, B T 19
 Haemler F H 26
 Hagard, W D., 39
 Haines, E F 431
 Halberstadt, L 450
 Halbertsma, J J 7
 Hall, J K 66
 Hall, O D 466
 Halsted, A E 448
 Hamaker, O 99
 Hammer A W 3
 Hammer H 474
 Hammons, L 9
 Hammon, O S 333
 Hardt, L L., 44
 Harpster C M 260
 Harris, B H 97
 Harrison, G. A 374
 Harvey, S C 4
 Haskell, C C., 39
 Hasner O 49
 Hawke, E. M 471
 Hawthorne, C O 55 4
 Haydon, L., 24
 Hayman E P 30
 Haynes, L W 47
 Hedlora, C A 16, 66 299
 Heineger F
 Heineberg, A 30
 Heffelfall, H J
 Heller E P 366
 Hellstrom, J 440
 Hell, W. A 64, 20
 Helvick, F J 39
 Henderson, M B 24 336
 Herbst, R H 3, 430
 Herman, L 478
 Herter A E 291
 Herpin, P A 93
 Heuer G J 302
 Hildebrandt, M A 80
 Hinson F 476
 Hinton, W A., 266
 Huston, A 48
 Hirschman, L J
 Hirt, J C 3 30
 Hoeg, C, 343
 Hodges, P C 301
 Hoerncke T 3
 Hofer, O 36
 Hoffmann, V 447
 Hoag, G H 385
 Hobland, E 37
 Holman, F F 414
 Holmes, R W 38
 Holmstrom, M., 9
 Hosen, M R 38, 467
 Horlitz, C F J
 Houser, K M 39
 Howard, C A 369
 Huck, J G 433
 Huebner I 478
 Huettl, T., 30
 Huguenot, R R 36
 Hunsicker, G L., 94 479
 Hurst, D N 27
 Hucks, G., 444
 Ivy A C 108
 Ivy R H
 Jack C M 300
 Jackson, C 27 291, 49
 Jacoby P 36
 Jacobson, P C 34
 Jacoby W 35
 Jann, J 7
 Jann, C 336
 Jepson, W 299
 Jeschke, R C 36
 Jukes, J 390
 Johnson, C L 30
 Jones, C M 34
 Jones, D F 3, 325
 Jones, J F 3 39
 Jomeneo T 16
 Jopson J H 4
 Joynt, C 0
 Judd, F S., 35, 43
 Jungblut, C W 4
 Jurek, A 403
 Kampner O F 47
 Kappa, M 36, 433
 Kaufman C 416
 Keene F L 35
 Keller O., 62
 Kermoo P D 396
 Kessler E. H 8
 Kettle, E. H 38
 Keyes, A B 330
 Keyser L D 431
 Kil, J. 49
 Kigore A R 368
 Kinsborough, J B 420
 Kirch L., 95
 Kirkin, B R., 99
 Kirschberg S 45
 Kirschmidt, O 351
 Kirschmidt, P 26
 Kirsperer, P 45
 Klose, H 66, 20
 Knapp, A 300, 369 395
 Knapp, H B 340
 Knoll, W 303
 Krog, F 6
 Krog, J., 29
 Kromm, G W 90
 Kruis W 35 452
 Kruis, L., 366
 Krenner H 245
 Kretschmer H L 264 477
 Kretschmar, H A H 40
 Krom, 244
 Kropfeld S M., 90
 Krom, I 97 66
 Kuhn, C I 407
 Laeven A 35
 Laquitt, 44
 Lahey, F H 291
 Laiz E S 299
 Lampert M 30
 Landolt E 437
 Lane, W A 73 27
 Lang, F J 43
 Langsdorf, O 346
 Langnecker H L 347
 Laquerrière 36
 Lantieri, A. J
 Larnie, T F 293
 Lawrence, R D 374
 Lawry, P H 3
 Lectre, P 41
 Lederhose, O 35
 Lee B J., 167 301
 Legz, A T 243
 Legras, 265, 379
 Lehmann, F F 415
 Lehnbecker A 304, 413
 Lemmon, A Y 35
 Lemmon, W S., 303
 Lempery F 445
 Lennert, C., 396
 Lent, E J 27
 Lepore, 37
 Letti, V 447
 Leriche R 392, 394
 Levin, I 229, 39
 Levine, F C 8
 Levine M 26
 LeVialle L T 307
 Lewis, D 103
 Lewis, N D C 33
 Lichner, J 91
 Lichtner, J
 Lichtenstein R 266
 Lichtenstern H., 307
 Lillie H I 24, 367
 Linde, I C 35
 Lissel, E A 95
 Lissner 443
 Liss, S 416
 Lixabata, B 271
 Lippert, R B 430
 Lockhardt Moseley J P 73
 Lockwood, A L 302
 Lohr H 35
 Loch, W 33
 Lombard, I 34
 Loretz, A 443
 Lotbender, G 16
 Lower W F 50
 Lowrie, O S 374
 Lynch, I W 30
 Lynders, S 41
 Lyons, M R 27
 Lyons J H 8
 MacCreedy P M 303
 Mackenzie D W 38
 Macomber D 45
 Macrae D J 3
 Maßen, P 8
 Major R H 476
 Malone J V 3
 Mann, I C 324
 Marked, N W 97
 Maschuk, H 3
 Martens, C
 Martin, C L 38
 Martin W 217
 Maw, B 95
 Mawson B V 295
 Matus R 35
 Matthes, O 35
 Mausowitch B 44
 May A 1

- Mayhew J M 48
Mayo C H 33
Mayne W J 354
Mayer C 5
McArthur L L 28
McCabe F J 7
McClure C W 34
McClure W B 7
McConnell G 45
McDonald A L 37
McFarlan P F 36
McGuth A B 4
McGuire E R 02
McIver M A 320
McKittick L S 3
McMaster P D 324
McVail F P 309
McVay J R 3
M Williams C A 203 31
Mebane T B 344
Meeker W R 7
Meigs J V 42 53
Melchor E 73 407
Melton O C 406
Merrill W J 96
Meyer J 08
Meyer M 490
Meyer W 14 30
Michon L 90
Miller E M 03
Miller R H 435
Mills H W 80
Mills R W 420
Milward F W 45
Mintz 244
Mitchell A P 95
Mittell E A 4
Mister W J 446
Moffat B W 337
Mogharizli W 41
Monaco A 98
Monder H 213
Moody W B 300
Moore E 306
Moore B H 240
Moore F D 24
Moppert O O 7
Morel Kahn 36
Morse R 75
Morley J 3
Morse D D 07
Morton C A 4 7
Morton R 457
Moschowitz A 1
Moylan B 4 3
Moehder A 440
Muehle A 376
Muehle W 236 455
Muehl H R 374
Munger A D 482
Munro D 30
Murphy D P 89
Murphy J B 8
Murray D D 470
Murgelbach 45
Murtason L N 240
Murren H 200
Nacker F 378
New G B 65 4 3
Nichols R H 34 34
Nicholsen N A 454
Noordenbos W
Norman C C 80 363
Norman 306
Nyulasy A J 8
Ochsner A J
O'Connor J 88
Ochlecker F 26
Olsch W 66
Oliver J C 8
Oliver S F 3
Oliver I 353
Openha T H 244
Orrell S 77
Ormos P 33
Osborne E D 424
Ostermeier K 410
Ott W O 3 204
Ottendberg R 36
Oudard J G 3 7
Oudensal A J F 40
Parmer C F 240
Palagay J 426
Park E A 436
Parker W B 380
Parisch 76
Paschell C 369
Paterson H J 27
Pattin J M 54
Paul N 45
Pendergast E P 30
Pennington J R 74
Pernan E 4
Perna G 36
Peterson E W 87
Pfahler G E
Pfanner W 237
Pfanner 267
Pfleider D B 423
Philer C H 316
Pechler H 79
Pickard R 457
Pickett A N 9
Piper E B 90
Pleth V
Phoon L 320
Pohl J O 4
Polomoff A L
Pomerooy L A 45
Poppens P H 90
Prinrose A 3
Probstner A 43
Prudent H J
Pryor J H 306
Pruessner L 44
Quain F P 3 4 428
Quay W C 375
Quand W S 3
Radach H E 3
Rahn H 426
Rando V C 30
Raskin F W 33
Raschhoff J L 434
Rattamaker J P 270
Rectenwald J J 400
Rehman M I 470
Rehn E 379
Reichle 171
Reichle R 3
Reid M R 42
Retterer E 3
Reverchon L 75
Reyn P 3 4
Reuter F A 33
Rhodes R L 93
Rachidom A 76
Richards T 47
Richter J 220 263
Rieder W 37
Rigby H M 326
Ringer P H 304
Rivers A B 424
Roberts J B 305
Roberts P W 423
Roeder C A 20
Roepke W 3
Roettger P 379
Rogers M H 93
Roenthal 53
Rosenstein 33
Rost F 74
Roth P B 27
Rothbart L 36
Rowan T
Rowell H G 407
Rowley W N 366
Rowntree L G 484
Rucker M P 80
Rud H
Rudolph A 4 3
Rumelberg B 47
Ryerson E W 346
Sack F 205
Sacks B 64
Sack E 3
Sadtler J E 4 7
Sampson C M 30
Sampson J A 41 80
Sand K 18
Sauer F D 28
Sausby J M 455
Sauter L R 455
Satta F 438
Saxl A 36
Saynd W 1 4
Scheide F 244
Schäfer H 53 34
Schma H R 383
Schlaepfer K 4 304
Schlegel A 28
Schmittler I 490
Schmidt E R 3
Schmidlin H 399
Schobert S S 123
Scholl A J J 47 49 61
Schroeder G F 24
Scholz O L 445 446
Schwartz A H 196
Schwartz F 444
Schwarz O 264
Schwader C L 83
Seare N P 474
Seppel H N 8
Seiborn H 468
Sencott L 07
Seng M I 38
Serra G 68
Shaw W F 43
Sha MacLennan J A 01
Shedden W M 383 45
Sheldon J G 266
Shoemaker J A 370
Shoemaker W T 90
Silbert S 76 81
Sillock W M 433
Simmons C C 0
Simpson F F 204
Sipstein D M 424
Sittenfeld M J 67
Skolem J H 470
Small W B 426
Smetsers E 77
Smith H 3
Smith A L 48
Smith D 3-6
Smith J A 3
Smith R R 8
Smith R 88
Smith S M 488
Smiths F 360
Solomon B 9
Sommer R 490
Sorge
Southern C T 9
Souttar H S 7
Späuer W G 30 77
Stahl O 227
Stanley L L 18
Stanton E M 376
Stark H H 383
Starr F N G 3 3
Stein O J 388
Stenopger A 34
Steiner O
Stengren M 87
Stenstrom K W 360
Serra W G 346
Stevens J H 38
Stevens W E 374 478
Stewart I G
Stewart M J 225
Stinson C M
Stokey B 79
Storford J S B 8
Strickle L 96
Strobel C W 300
Sturm I 8
Sutherland C C 44
Sutton G E 65
Sutton M G 374
Svensson L 36
Synonide C 3 9
Tardacorn 297
Tarnag L
Tarnag L R 304
Taylor F B 73
Taylor W J 450
Teffa J H 370
Ten Broeck C 23
Teuchhoff B 407 46
Tennbaum J L 197
Tennant C F 483

- Hagwood K M
Hagstetter, H 92, 477
Hachler H 306
Hachler M H 390
Hachler A A 396
Hachler, J 4 5
Hachler, N C 432
Hachler, J 95
Hachler, P 96
Hachler, R T 6, 364
Hachler, F 33
Hachler, W B 34
Hachler I B 7
Hachler, C H 30 77
Hachler O T
Hachler A H 334
Hachler, J S 30
Hachler, M O 74
Hachler, M 43
Hachler, O 37
Hachler, R M 5
Hachler, A 374, 474
Hachler, H D 36
Hachler, M 349
Hachler, E 96
Hachler, R 357
Hachler, W 30
Hachler, C L 365
Hachler, H R 360
Hachler, W 4 8
Hachler, R K 333
Hachler, B R 300
Hachler, A E 453
Hachler, A S 195, 206 3 4
Hachler, F R 364
Hachler, G R 343, 443
Hachler, E 450
Hachler O 390
Hachler, O 304
Hachler D M 33
Hachler, C 300
Hachler, R 332
Hachler O 4 9
Hachler, W 475
Hachler, I A 97
Hachler, J 40
Hachler, V 95
Hachler, E L 47
Hachler, A 64
Hachler, J K 37
Hachler, O A 404
Hachler, M J 304
Hachler, H 363
Hachler, E A 5 81
Hachler, A R 389
Hachler, C 4
Hachler, S 4
Hachler, M W 37
Hachler, J P 37 473
Hachler, I 377
Hachler, H E 43
Hachler, W E 358
Hachler, W R 373
Hachler, 347
Hachler, C G 451
Hachler, C 475
Hachler, 430
Hachler, W 470
Hachler, M 446, 446
Hachler, B T 126
Hachler, F H 36
Hachler, W D 3 9
Hachler, E F 453
Hachler, L 450
Hachler, J 7
Hachler, O 166
Hachler, D 460
Hachler, A E 448
Hachler, G 99
Hachler, A R 5
Hachler, H 474
Hachler, L 19
Hachler, O S 335
Hachler, L L 434
Hachler, C M 360
Hachler, S H 197
Hachler, G A 3 4
Hachler, S C 4
Hachler, C C 59
Hachler O 4 9
Hachler, E M 471
Hachler, C O 53 4
Hachler, L 34
Hachler, E P 39
Hachler, L W 47
Hachler, C A 16, 69, 292
Hachler, L 32
Hachler, A 450
Hachler, H 77
Hachler, E P 366
Hachler, J 440
Hachler, G 66, 30
Hachler, F 3 0
Hachler, M 3 24, 335
Hachler, R H 33, 450
Hachler, L 475
Hachler, A E 305
Hachler, P A 93
Hachler, O J 302
Hachler, M A 80
Hachler, F 475
Hachler, W A 386
Hachler, A 4 8
Hachler, L J
Hachler, J C 32, 30
Hachler, C 343
Hachler, P C 30
Hachler, E 3
Hachler, O 36
Hachler, V 447
Hachler, O H 385
Hachler, F 371
Hachler, E 4 4
Hachler, R W 38
Hachler, M 9
Hachler, M R 88 467
Hachler, C F 3
Hachler, K M 30
Hachler, C A 30
Hachler, J O 453
Hachler, F 478
Hachler, T 30
Hachler, R R 86
Hachler, G L 194 470
Hachler, D N 77
Hachler, G 444
Hachler, A C 104
Hachler, C M 300
Hachler, C 372, 394 4 9
Hachler, P 36
Hachler, P C 34
Hachler, W 38
Hachler, J 7
Hachler, O 336
Hachler, W 300
Hachler, R C 30
Hachler, J 390
Hachler, G L 30
Hachler, C M 34
Hachler, D J 3 3
Hachler, J I 3 9
Hachler, T 6
Hachler, J H 4
Hachler, C 9
Hachler, S 31 4 2
Hachler, W 4
Hachler, A 403
Hachler, O 477
Hachler, M 36 434
Hachler, C 476
Hachler, F L 335
Hachler, O 92
Hachler, P D 346
Hachler, L H 8
Hachler, F H 336
Hachler, A D 330
Hachler, L 454
Hachler, F 45
Hachler, A R 305
Hachler, J B 430
Hachler, I 106
Hachler, B R 99
Hachler, S 343
Hachler, O 33
Hachler, P 36
Hachler, P 41
Hachler, H 66, 30
Hachler, A 300, 369 3
Hachler, H 340
Hachler, W 39
Hachler, F 6
Hachler, J 30
Hachler, G W 90
Hachler, W 35 45
Hachler, L 396
Hachler, H 343
Hachler, H L 364 477
Hachler, H A 40
Hachler, 44
Hachler, S M 90
Hachler, I 7 463
Hachler, C I 40
Hachler, A 433
Hachler, 44
Hachler, F H 30
Hachler, E 3 99
Hachler, M 30
Hachler, L 487
Hachler, W 73 7
Hachler, F 43
Hachler, O 336
Hachler, H L 347
Hachler, 36
Hachler, A 3
Hachler, T F 363
Hachler, R D 374
Hachler, P H 3
Hachler, P 34
Hachler, O 35
Hachler, B J 167 301
Hachler, A T 343
Hachler, 363, 370
Hachler, F 448
Hachler, V 451
Hachler, V 33
Hachler, W S 303
Hachler, F 443
Hachler, C 350
Hachler, E J 37
Hachler, 57
Hachler, A 447
Hachler, R 330 334
Hachler, I 320, 36
Hachler, C 8
Hachler, M 36
Hachler, L T 307
Hachler, D 103
Hachler, N D C 33
Hachler, J
Hachler, 360
Hachler, H 307
Hachler, H J 74 367
Hachler, E C 5
Hachler, L A 95
Hachler, 443
Hachler, 4 6
Hachler, D 7
Hachler, I B 439
Hachler, M 73
Hachler, A L 30
Hachler, H 35
Hachler, W 35
Hachler, P 34
Hachler, A 443
Hachler, O 6
Hachler, E 30
Hachler, O S 374
Hachler, I W 30
Hachler, B 411
Hachler, M B 37
Hachler, J H 8
Hachler, P M 303
Hachler, D W 34
Hachler, D 43
Hachler, D J 3 5
Hachler, F 36
Hachler, R H 476
Hachler, J V 31
Hachler, C 334
Hachler, W 367
Hachler, H 3
Hachler, E 3
Hachler, C L 38
Hachler, W 337
Hachler, B 93
Hachler, I 304
Hachler, R 35
Hachler, G 33
Hachler, B 4 4
Hachler, A 73

